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# PHYSICAL GEOGRAPHY

OF THE

# HOLY LAND.

BY

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## A SUPPLEMENT

TO THE LATE AUTHOR'S BIBLICAL RESEARCHES IN PALESTINE.

THE MAPS
OF THE LATER BIBLICAL RESEARCHES WILL SERVE FOR THIS WORK.

BOSTON:
PUBLISHED BY CROCKER AND BREWSTER,
51 WASHINGTON STREET.
1865.

Entered according to Act of Congress, in the year 1865, by
CROCKER & BREWSTER,
In the Clerk's Office of the District Court of the District of Massachusetts.

ANDOVER:
STEREOTYPED AND PRINTED
BY W. F. DRAPER.

# PREFACE.

THE late author of the following work has repeatedly stated, both in conversation and in writing, that he considered his books of travel as merely preparatory to a "systematic work on the Physical and Historical Geography of the Holy Land," to which he intended to devote all his remaining energies. He commenced this labor very shortly after his first journey to the East, the results of which were communicated in the "Biblical Researches in Palestine," etc. The "Physical Geography of the Syrian Coast," which is given to the reader in the Appendix of the present volume, formed the commencement of the above work.

The author's second journey, the motives for which are stated in the Introduction to his "Later Biblical Researches," caused an interruption in this labor. When, some years later, he resumed it, it was on an entirely different and improved plan, of which he places before the reader an accurate statement in the "*Introduction*" that follows. This plan he regarded as the best and most appropriate; but he had also another more personal reason for adopting it. He felt that, on account of his increasing years, he might perhaps not be permitted to finish the *whole* of the great work comprised in this design, and that in the case of his being taken away, he would rather leave to others those countries which he designates as "outlying" than

those of the " Central Region," which he had made for a quarter of a century the object of his indefatigable investigations, and for the thorough knowledge of which he could, as it were, be responsible as an eye-witness.

This first part he had hoped to finish. But it was otherwise decreed above; and a comparatively small portion — thorough and complete in itself, however, without a missing note, without the omission of a single word to be subsequently inserted — is all that is left to the world from the hand of the earnest, faithful investigator.

The *Physical* Geography was to be followed immediately by the *Historical;* this again by the *Topographical*, arranged alphabetically. Lebanon and Sinai, similarly treated, were to have succeeded, as parts of the *Central Region*, this main portion. Whatever fragments and sketches relating to this subject the author has left, the editor prefers to withhold from the public, rather than give them, worked out by another hand, in the shape of patchwork, as it were, and therefore so decidedly in contradiction to the author's peculiar spirit. All that she does transmit to the world in the following pages, will, she trusts, be welcome; partly as a systematic presentation of the geographical researches of the author in the Holy Land, partly as a *Supplement* to his former works.

The maps of the Later Biblical Researches will serve for this book. Only the author himself could have furnished before its publication the materials for such improvements as the appearance of this work may call forth.

TH. R.

NEW YORK, MAY, 1864.

# CONTENTS.

## INTRODUCTION.

PALESTINE the central point of Biblical Geography, 1. Relations of the Hebrew people to Jehovah, 1, 2. World-wide influence, 1, 2. Position and isolation of Palestine, 2. Its remarkable feature, the great longitudinal valley, 2. Character of its sides, 2. Depression, 2. Assumed divisions of the region, 3. Northern Syria, Lebanon, Palestine proper, Sinai, etc., 3.

FIRST VOLUME: Palestine with Lebanon and Sinai, 3. These regions visited by the author, 3. SECOND VOLUME: Outlying Regions, 4. Northern Syria; Armenia, Mesopotamia, Assyria, Babylon, Media, Persia; Arabia, Ethiopia, Egypt; Asia Minor, Greece, Italy, 4. Relations of these countries to the Old and New Testaments, 4; and to Central Palestine, 5.

SOURCES. The Bible, 6. Its method, 6. Works of Josephus, 6, 17. Native names of places, a national tradition, 7. EPOCHS, 7. *First Epoch:* the Onomasticon, about A. D. 330, 8. Other early works, travels, etc., 8, 9. *Second Epoch:* the work of Brocardus, about A. D. 1283, 9. Travels of the next three centuries, 9. *Third Epoch:* the work of Quaresmius, A. D. 1625, 9. The storehouse of ecclesiastical tradition, 9. Travellers in the subsequent centuries: Maundrell, Pococke, Hasselquist, 10. In the nineteenth century, Seetzen, Burckhardt, Irby and Mangles, Russegger, Schubert, 10. Biblical Researches in Palestine in 1838 and 1852, 10. Other later travellers, 10. *Fourth Epoch:* Ritter's Comparative Geography of Sinai, Palestine, and Syria, 10. Notices by ancient Greek and Roman writers best in Reland's *Palaestina*, 10, 11. As to the present state, the author's own personal observations a chief source, 11.

## PALESTINE.

NAMES: Palestine, 15. Canaan, 15. The Promised Land, 16. The Holy Land, 16. Other appellations, 16.

BOUNDARIES AND EXTENT. Originally extended only to the Jordan, 16. Southern boundary, 17. Western, the sea, 17. Northern, 18. Eastern, the desert, 17. Length and breadth, 18. Area, 18.

## CHAPTER I.

### THE SURFACE. GENERAL FEATURES.

Four long parallel tracts, two low, and two elevated, 19. The plain along the coast; the Valley of Jordan. Hill-country on the west. Hill-country on the east, 19.

### SECTION I.

### MOUNTAINS AND HILL-COUNTRY.

Hebrew word signifies both mountain and hill; sometimes used collectively, 20.

I. MOUNTAINS WEST OF JORDAN.

1. NORTH OF THE PLAIN OF ESDRAELON.

Character of the hill-country in the north, spreads to the sea at the *Promontorium Album* and the *Scala Tyriorum*, 20, 21. Belât in Ashur, a high point, 21. Wild district, 21. *Mount Naphthali*, 24. Jebel Jermŭk, 21. Hills and ridges, Tell Hazûr, *Mount Asamon*, 22. Kurûn Hattîn, wrongly Mount of Beatitudes, 22. Form, 22. Hills around Nazareth; legendary Mount of Precipitation, 23. *Mount Tabor*, 23. Appearance, prospect, history, 24. Parallel ridges south of Tabor, 25. *Little Hermon*, Jebel ed-Dŭhy, 26. *Mount Gilboa*, 27. Jebel Fukû'a, 27. *Mount Carmel*, and connecting line of hills, 28. Form, 29. Wady el-Milh on S. E., 29. Fertility and beauty, 29. Elijah's sacrifice, 30. Heathen altar, 31. Cells in the rock, 32.

2. SOUTH OF THE PLAIN OF ESDRAELON.

Hill-country interrupted by the plain, 32. Rises again towards the south, 32. Eastern line, from Gilboa south, 32. Western line, from the plain south, 33. Line of lower hills on the west, 33, 34. Breadth of mountain region, 34. Its steep eastern slope, 34, 35. DIVISIONS and names, 35. *Mountains of Samaria*, 36. *Mountains of Israel*, 36.

MOUNTAINS OF EPHRAIM, 36. *Mount* or *Hill of Samaria*, 36. *Ebal* and *Gerizim*, 36–40. History and ruins of Gerizim, 36–40. *Mount Zalmon*, 40. Sheikh Salmôn el-Fârisy, 40. *Mount of the Amalekites*, 41. *Mount Bethel*, 41. *Mount Zemaraîm*, 41. *Hill of Gaash*, and brooks, 41, 42.

MOUNTAINS OF JUDAH, 42. *Hill of Gibeah*, 42. *Mount of Gibeon, Neby Samwîl*, 42. *Mount of Olives*, 42–44. Frank Mountain, 44; site of *Beth-haccerem*, 44. *Mount Perazim*, 45. *Mount* west of the valley of Hinnom, 45. *Mount Ephron*, 45, 46. *Mount Jearim*, 46. *Mount Seir*, 46.

*Hills near the seacoast of Judah*, 47. Sandhill, 47. *Mount Baasah*, 47. *Mount of Azotus*, 47. *Mons Angaris*, 47, 48. *Hill towards Hebron*, 48.

3. MOUNTAINS OVERHANGING THE GHÔR AND DEAD SEA, ON THE WEST.

Wall of cliffs, etc., 48. Kŭrn Sŭrtabeh, 48, 49. Quarantana, Jebel Kŭrŭntŭl, 49, 50. Cliffs west of Dead Sea, 50. *Mountains of Engedi*, 50. Sebbeh, *Masada*, 51. Mountain of Salt, at S. W. corner of Dead Sea, 51–53. *Mountain of the Amorites*, 53. *Ascent of Akrabbim*, Scorpion Cliffs, 53, 54.

II. MOUNTAINS EAST OF JORDAN.

Jebel Heish, ending at Tell el-Feras, 54. Region east of the lake of Tiberias, 54. Jebel ed-Derŭz (Druze Mountain), Jebel Haurân, 54. Form and summits, 55. Kuleib Haurân, form, 55. Meaning of the name, 55. Character of the range, 55, 56. Is the *Mons Alsadamus* of the ancients, 56. Bashan, kingdom of Og, 56. *Mount of Bashan*, probably Hermon, 57. Jebel 'Ajlûn, the northern Mount Gilead, 57. Character, extent, elevation, 58. Table-land and valleys, beauty, 59. Southern "half *Mount Gilead*," or el-Belka, extent, 59. Jebel Jil'âd, Neby Osha, prospect, 59. Country further south, 59. Western slopes of the mountain, 60. Elevation, 61. Level-line as seen from the west, 61. Particular mountains, 62. Moab and Sihon, 62. Reuben and Gad, 62. Plains of Moab, by Jordan, 62. *Mount Abarim*, 62. *Mount Pisgah*, 63. *Mount Nebo*, 64. Mount of *Peor*, 65. Ridge of Jebel 'Attârûs, with the ruins of *Ataroth*, *Kirjathaim*, and *Machærus*, 66, 67. *Iron Mountain*, 67. Mountains of Moab, Jebel Shîhân, 67, 68. Hill of Kerak, elevation, 68. Mountains of *Bether*, *Bithron*, signification, position uncertain, 68, 69.

SECTION II.

VALLEYS.

Different Hebrew words rendered "valley," 70. *Bik'ah*, 70. *'Emek*, 70. *Nahal*, 71. *Gai*, 71. Valleys mostly without permanent streams, 72.

I. VALLEY OF THE JORDAN, OR EL-GHÔR.

Part of the great longitudinal valley, 72. Its extension north and south, 72. Wady et-Teim, 73.

*Name.*—The *'Arabah*, 73. Plur. *'Arboth*, wastes or plains, 74. The *Aulon*, the *Ghôr*, 74.

*General Features.* — Basin or Plain of the Hûleh, 75. Its rapid descent, 75. Its fertility, 75, 76. Ancient Names: *Merom*, *Ulatha*, 76. From the Hûleh to the lake of Tiberias, 77. Plain of el-Batîhah, 77. Plain of Gennesareth, 78. Character of the hills south of the lake, 79. Mountains of 'Ajlûn, etc., 78. Val-

ley of Jezreel enters, 78. Hills and valleys south of Mount Gilboa, 78. Plain of the Ghôr, 78. Valley below Sâkût, 79. Plain el-Kŭrâwa, 79. The Ghôr contracted by Kŭrn Sŭrtabeh, 79. The lower Ghôr, a desert, 79. Breadth at Jericho, etc., 80. Length, from lake of Tiberias to Dead Sea, 80. Depression and rapid slope, 80.

*Valleys or Plains within the Ghôr.*—The Hebrew word *Kikkar*, 'circuit,' of Jordan, 80. The *Bik'ah*, plain or valley; e. g. of Lebanon, of Jericho, 81. The Ghôr also an *Emek*, 81; e. g. valley by Beth-Rehob, of Succoth, of Siddim, 81. Valley of *Achor*, of *Keziz*, 82. The Ghôr a *Gai*; e. g. valley over against Beth-Peor, 82. Valley of Salt, 82.

II. THE GHÔR: SIDE VALLEYS FROM THE EAST.

Two great valleys near Bâniâs, 83. Wady el-'Asal, 84. Wady Khŭshâbeh, 84. Wady Za'âreh, 84. Merj Yafûny, and brook, 85. *Land and valley of Mizpeh*, 85. Wady Semak and Wady Fîk, 86. *Valley of the Passengers*, 86. Valley of the Hieromax, 86. Brook by *Raphon*, 86. Wady Yâbis, *Jabesh-Gilead*, 86. Wady el-Hemâr, 86. Wady Mahneh, *Mahanaim*, 86. Wady 'Ajlûn, Bithron, 87. *Valley of the Jabbok*, 87. Wady Sha'ib, Nimrîn, *Beth-Nimrah*, 87. Wady Hesbân, *Heshbon*, 87. *Second valley over against Beth-Peor*, 87, 88. Wady Zerka Ma'în, *Callirrhoë*, 88. Wady Môjib, *the Arnon*, 88. Wady ed-Dera'ah, 88. Wady el-Ahsy, *brook Zered*, 88. *The valley in the country of Moab*, 88. The high plain, 89.

III. THE GHÔR: SIDE VALLEYS FROM THE WEST.

The Derdârah, from Merj 'Ayûn, 89. Wady Hendaj, 89. Wady el-'Amûd, 89. Wady er-Rŭbŭdîyeh, 89. Wady el-Hamâm, and its caverns, *Beth-Arbel*, *Arbela*, 90. Wady el-Bîreh, 90. *Valley of Jezreel*, described, 91, 92. Wady Mâlih, 92. Wady el-Fâri'a, 92, 93. Wady Fŭsâil, *Phasaëlis*, 93. Wady el-'Aujeh, Wady en-Nawâ'imeh, and its upper branches, 94. Wady Kelt, its heads, 94. Is probably 'the river,' also 'the water of Jericho,' 94. Probably also the *brook Cherith*, 94, 95. *Valley of Zeboim*, 96. The *brook Kidron* described, 96, 97. *The valley of Hinnom*, described, 98–100. *Tophet*, 100. *Gihon*, fountain, brook, 100, 101. *Valley of Shaveh, the King's dale*, 101, 102. *Valley of Jehoshaphat*, 102. *Valley of Vision*, Jerusalem, 103. *The river of the Wilderness*, 103. *Valley of Berachah*, 103. Deep valleys on the western coast of the Dead Sea, 104.

IV. VALLEYS RUNNING TO THE COAST.

General character, 104. Wady el-'Ayûn, or el-'Azzîyeh, 104, 105. Wady Hâmûl, 105. Wady el-Kŭrn, and fortress Kurein, 105. Wady Sha'ab, 105. Wady 'Abilîn, or *valley of Jiphthah-el*, 106, 107. Wady Bedawîyeh, or Wady Melik,

107. 'River' Kishon, 107. Wady Wesa, or Wady Abu Nâr, 107. Wady Mussîn, 108. Wady Sha'îr, from Nâbulus, 108, 109. Valleys next south, 109. Wady 'Azzûn, by *Antipatris*, 109. Wady Kânah, *river Kânah*, 109, 110. Wady Bîr Jenâb, or Wady Ribâh, 110. Wady Belât, or Wady Kŭrâwa, 110, 111. *Brooks of Gaash*, 111. Wady Ludd, or Wady Muzeiri'ah, 111, 112. Wady from Ram Allah, 112. Wady 'Atallah, 112. Wady 'Aly, 112. *Valley of Ajalon*, 112, 113. *Valley* or *plain of Ono*, 113. *Valley of Craftsmen*, 113. Nahr Rûbîn at *Jabneh*, 113. Wady Sŭrâr, 114. Wady Isma'îl, 114. Wady Beit Hanîna, 114. Wady el-Werd, Wady Ahmed, Wady Bittîr, 115. Wady Ghŭrâb, 115. *Valley by Gibeon*, 115, 116. *Valley of Rephaim* or *the Giants*, 116. *Valley of Sorek*, 116. Wady es-Sŭmt, 116, 117; formed by Wady el-Mŭsŭrr and Wady es-Sŭr, 117; is the *valley of Elah*, 117. Wady Simsim, made from Wady Feranj and Wady el-Hasy, 118. *Valley of Zephathah*, 118. Place where Philip baptized the eunuch, 119. Wady esh-Sheri'ah, from Beersheba, 119, 120. Made from Wady 'Ar'ârah and Wady el-Khŭlîl, 120. *Vale of Hebron*, 120. *Brook of Eshcol*, 120, 121. *The brook Besor*, *Ziklag*, 121, 122. Valleys south of Beersheba, *valley of Gerar*, 123. Wady el-'Arîsh, *river* or *torrent of Egypt*, 123, 124. NOTE. *Valley of Baca*, symbolical, 124.

## SECTION III.

### PLAINS.

#### I. PLAINS ALONG THE COAST.

Southern end of the Phenician plains, 125. Plain of 'Akka, 125. Plain south of Carmel, or plain of *Sharon*, 126. Plain of *Ono*, 127. Plain south of Lydda and Joppa, *the Sephela*, 127. *Daroma*, 'the south,' 128.

#### II. PLAINS IN THE HILL-COUNTRY WEST OF THE GHÔR.

*Plain of Asor*, Hazor, 129. Parallel plains, 130. Plain of *Ramah*, 130. Plain of el-Bŭttauf, or plain of Zebulun, 130, 131. Plain of Esdraelon, form, extent, 131, 132. Three arms or branches towards the east, 132. Names in Scripture, etc., 133. Scene of battles, 134. Plain of *Dothan*, 135. Plain near Sânûr, 135. Plain known as the Mŭkhna, 136. Scriptural notices, 137. Plain *at Gibeon*, 137. Plain of *Rephaim*, 137. *Level tracts* of Judah, 138. 'Plains' put for *oaks*, 138.

#### III. PLAINS IN THE GHÔR.

Enumeration and references, 138, 139.

IV. PLAINS EAST OF THE GHÔR.

Plain of *Mizpeh*, 139. Great plain of Haurân, 139, 140. Plain of the Belka, 140, 141. Scriptural notices, 141. *The plain*, 142. Plain of *Kiriathaim*, 142.

---

## CHAPTER II.

### WATERS.

General supply of water, 143.

### SECTION I.

### RIVERS AND MINOR STREAMS.

The Jordan and its tributaries, the chief streams, 144.

I. THE JORDAN AND ITS SOURCES.

General characteristics, 144. Divisions, 144. Length, 145. The valleys, what, 145. *Name*, 145. Etymology, 145.

Upper Jordan. Sources. Three main streams, 146. The Hâsbâny, 146. Source, 146. Bridge, 147. Its course below, 147, 148. 'Ain Seraiyib, a feeder, 147. Chasm and 'Ain Luweizâny, also a feeder, 148. *Tell el-Kâdy, the Leddân*, 148. Form of the Tell, 149. Immense fountains, 149, 150. Mills, irrigation, 150. *Nahr Bâniâs*. The great fountain, 150–152. Ancient *Panium*, 151. Water-course of the stream, 151, 152. *Junction of the streams*, 152, 153. Relative size, 153. *Historical Notices*. Only two sources named of old, 153. The Hâsbâny not mentioned, 153, 154. Analogies, 154. Principle involved, 154. *From the Hûleh to the lake of Tiberias*, 154. Bridge, 155. *Geshur* and Geshurites, 156. Rapid descent and foaming stream, 155, 156. From Bethsaida (Julias), estuary, 156.

Middle Jordan: — Its issue from the lake, 156. Many rocks and strong rapids, 157. In August full of low dams; river easily crossed, 157. Entrance of the Hieromax; bridge, 158. Windings, the Ghôr, 158, 159. Fords, 158, 159. Course below, 159.

Lower Jordan. — Character at Kŭrn Sŭrtabeh and below, 159, 160. Lower fords, 160, 161. Bathing-places of pilgrims, 160. Course of the river more on the east, 161.

General Features. — *Valley and Channel*, 161. Two terraces, or valleys, 161. Border of trees, etc., 161. Outer banks, 161, 162. The river winds, but not its valley, 162. Pride of Jordan, 162. *Descent and Depression*, amount, 162, 163. *Overflows of Jordan*. The river in spring runs with full banks, 164, 165. Reasons why there are no floods, 163, 164. *Loneliness of Jordan*; no towns, 163, 164. No boats, one raft, 165. No fisheries, 165, 166. *Jordan as a boundary*. Difficult to be passed, 166. First mention, 166. Country 'beyond Jordan,' 166, 167. Recorded passages of Jordan, 167, 168. Baptism of Jesus by John, 168. Twice Jesus crosses over, 168. *Explorations of Jordan*, 168. Costigan, 169. Molyneux, 169, 170. Lynch, 170, 171.

II. THE JORDAN: TRIBUTARIES FROM THE EAST.

Wady Za'âreh, 171. Head branches of the A'waj, 172. The *Jarmuk* or Hieromax, 172. Its sources and head branches, 173, 174. Its western part, 175. Hot springs, 175, 176. Confluence with Jordan, 176. The *Jabbok*, ez-Zerka, 176–178. Scriptural notices, 177, 178. The Zerka Ma'în, 178–180. Hot springs, *Callirrhoë*, 179, 180. The *Arnon*, Nahr el-Môjib, 180. North branch, the Wâleh, 180. The Môjib proper, 181, 182. Scriptural notices, 182. Wady Kerak, 182, 183. Wady el-Ahsy, or el-Kŭrâhy, 183; is the *brook Zered*, 184.

III. THE JORDAN: TRIBUTARIES FROM THE WEST.

The Derdârah, 184. Brooks, 185. Nahr el-Jâlûḍ, 185. 'Ain Jâlûd, 185. The stream, 185, 186. Stream of Wady el-Fâri'a, 186. *Water of Jericho*, 186.

IV. RIVERS ALONG THE COAST.

General character, 187. The *Belus*, Nahr Na'mân, 187. The *Kishon*, Nahr el-Mukŭtta' 187. Remote sources in winter, inundations, 188. Junction in the plain, miriness, 189. Dry in summer, 188, 190. Permanent sources, 190. Estuary and sandbar, 190, 191. Nahr Belka, 191. Nahr ez-Zerka, 191. Crocodiles, 191, 192. Is the *Shihor-Libnath* of Scripture, 192. Nahr el-Akhdar, 192. Nahr Abu Zabûrah, 172. Nahr Arsûf, or Nahr el-Failak, 192, 193. Nahr el-'Aujeh, 193, 194. Streams south of Jâfa: Nahr Rûbîn, 194. Wady at 'Askŭlân, 194. Wady el-'Arîsh, 194. No permanent stream south of the 'Aujeh, 194, 195.

## SECTION II.

### LAKES.

The four lakes of Palestine, 196.

I. The Phiala. — Now Birket er-Râm, situation, elevation, 196. Its basin or

bowl, extent, 196, 197. Stagnant and slimy waters, 197. Wild fowl, frogs, leeches, 197. Historical notices and position, 197, 198. Not a source of the Jordan, 198.

II. Lake of the Huleh. — Situation and form, 198. Adjacent marsh, 198. Extent, 199. Not deep and not navigated, 199. Is the ancient *waters of Merom and lake Semechonitis*, 199.

III. Lake of Tiberias. — Form and extent, 199. Depression about six hundred and fifty feet, 199. Variation of level, 200. The water sweet, 200. Fish and fishing, 200, 201. A single boat, 201. Character of the shores, 201, 202. High winds and tempests, 202. Volcanic tract, 202, 203.

*Historical Notices*, 203. Ancient names, 203. Its connection with the history of the Saviour, 203. His excursions across the lake, 203, 204. Ancient navigation and sea fight, 204. Ancient fisheries, 204, 205.

*The Hot Springs*, 205. Situation, temperature, etc., 205, 206. Ancient notices, 206.

IV. The Dead Sea. — Its remarkable features, 206. Ancient names, 207, 208. *Form and Extent*, 207. Lies in a *crevasse*, between parallel mountains, 207. The ends rounded, 207. Peninsular and southern bay, 208. Length and breadth, 208. *Depth and Depression.* Soundings, 208, 209. Variation of the surface, 209. Level below the Mediterranean, 209. Results; depression of Dead Sea, 1316.7 feet, 209. Unsuspected before 1837, 210.

*Views from the Western Cliffs.* Approach to the Dead Sea from the west; great descent, 210. Cliff overhanging 'Ain Jidy; extensive prospect, 210, 211. Shores of the sea like an estuary, 211. The peninsula, 211, 212. Mountains on the western coast, 211. Kerak, the Arnon, etc., 212.

*Character of the Waters.* General qualities, 212. Four analyses, 212, 213. Cause of the excessive saltness, 214. Buoyant power, 215. Heavy waves, quickly stilled, 215, 216. No trace of animal or vegetable life, 216, 217. Great evaporation, 217. Deposits of salt at Birket el-Khŭlîl, etc., 217, 218. Legendary reports, mostly without foundation, 218, 219. Many birds around, 219. Heat of the climate unhealthy, 219, 220.

*Asphaltum.* Ancient accounts, 220. Appears only occasionally, as in 1834 and 1837, 220, 221. Rises from the bottom, 221.

*Character of the shores.* Parallel ranges of mountains enclosing the chasm, 221, 222. Scenery, 222. Geological features, 222. The strands; no passage in some parts along the water, 222, 223. Southern shore, a mud flat, 223. Northern shore, 223. Belt between high and low water-mark, 223. Minerals occasionally picked up, 224. Blocks of breccia, etc., 224. Stone of Moses, or stink-stone, 224. Drift-wood, 225.

*The Peninsula.* Form and extent, 225. Appearance, elevation, etc., 225, 226. The isthmus, irrigation, fertility, 226, 227. Not mentioned by ancient writers; notices, 227, 228. A small peninsula in the north, 228. Reputed islands, 228, 229.

*The Ford.* Two fords reported, 229, 230. They exist only where the sea is very low, 230.

*Navigation and Exploration.* Hints of ancient navigation very slight; Josephus, 230. Edrisi, 231. Voyage of Costigan, 231, of Moore and Beke, 231, 232; of Molyneux, 232. United States' Expedition; its labors and results, 232, 233.

*Destruction of Sodom.* The Dead Sea existed previously, but only north of the peninsula, 233, 234. Vale of Siddim, slime pits, 235. Probable manner of the catastrophe, 235. The fertile plain now submerged by the southern bay, 235.

*Apples of Sodom.* The 'Ösher, *Asclepias gigantea*, 236, 237.

SECTION III.

FOUNTAINS.

Palestine a land of *fountains* as compared with Egypt, 238. Reports to the contrary, 238, 239. Fountains recorded in Scripture, 239–241. The word 'Ain applied to villages, 241. Thirty fountains within ten miles around Jerusalem, 241, 242.

I. *Fountains in or near the Western Plain*, 243, 244.

II. *Fountains in the Hill-Country West of Jordan.* North of the Great Plain, 244. In and around the same plain, 245, 246. South of the Great Plain, 246. At Nâbulus, 247. Other fountains, 248. South of Jerusalem, 249. At Hebron, 250.

III. *Fountains in or near the Ghôr.* West of Jordan, 250. North of the lake of Tiberias, 251. At et-Tâbighah, 251. 'Ain et-Tîn, 252. Round fountain, 252. 'Ain el-Bâridch, 253. Hot springs, 253. From the lake to Kŭrn Sŭrtabch, 253. At Fŭsâil, 254. 'Ain Dûk, 254. 'Ain es-Sŭltân, 255. 'Ain Hajla, 255. On the west of the Dead Sea, 256. 'Ain Jidy, 257. Others further south, 258.

East of Jordan: few fountains in the north, 258. At Pella, 259. Waters of Nimrîm, 259. Fountains along the east side of the Dead Sea, 259, 260.

IV. *Fountains of the Hill-Country, East of Jordan*, 260. In the Lejâh, 260, 261. West of the Haj route, 261. In the plain and slopes of Haurân, 261. In Jebel 'Ajlûn, 261, 262. Around es-Salt, 262. At 'Ammân and in the Belka 262, 263. At Kerak, etc., 263.

*Warm and Mineral Fountains*, 263, 264.

SECTION IV.

WELLS. CISTERNS. RESERVOIRS. AQUEDUCTS.

I. Wells, 265. Wells of Abraham, Beer-sheba, 265. Wells of Isaac, Rehoboth, 266, 267. Jacob's well, 267–269. Other ancient wells, 269. Wells in the

fields, or by the roadside, 270. King Uzziah's wells, 270. Drinking-troughs for cattle, 271. Pastoral scenes, 271. Modes of drawing water, 271, 272.

II. Cisterns, their frequency, 272. Usually hewn out in the rock; form, 272, 273. Few in the plains, 273. Places where are found ancient cisterns, 273. Around Hebron, 274, 275. Between Jericho and Bethel, 275. Various places, 275, 276. Water of cisterns usually not pure, 276. Cisterns used as dungeons, 276. *Cisterns* for storing grain, 277.

III. Reservoirs, mostly ancient, or pools. Impurity of the water, 277, 278. Pool at Hebron, 278. Pool at Gibeon, 279, 280. Large ancient reservoirs at Bethel and Ai, 280. At various places, 280, 281. Solomon's Pools, 281. Measurement, source of supply, 281, 282. Vaulted room under the lower pool, 282, 283. Object of the pools, 283, 284.

IV. Aqueducts, modern, 284. Ancient, at Jerusalem, 284. Aqueduct from Solomon's Pools to the temple, 285. Course, 285. The channel, 286. Remains of a still earlier channel, 286, 287.

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## CHAPTER III.

### CLIMATE.

Preliminary remarks, 288. Parallel climate, 288.

I. SEASONS.

Only winter and summer, 288. Duration of each, 288.

Winter or Rainy Season.—Its beginning, 289. Time for ploughing and sowing, 289. Characteristics of the rainy season, 289, 290. Observation in 1843, and 1845, 290. Snow; observations, 290. Hail, 291. Frost, 291. Roads muddy and slippery, 291.

Early and Latter Rains.—Scriptural allusions, 291. Hebrew year, 292. No distinct season; beginning and end of the rainy season, 292. Consequences of their failure, 292.

Summer or the Dry Season. — Its variable beginnings. From May to October no rain, characteristics, 293. Vegetation withered and dry, 293. All nature longs for rain, 294.

*Fogs*, not unfrequent, 294. *Dew*, frequent and heavy, 294.

II. TEMPERATURE.

Causes which affect the temperature; differences of elevation, 295.

*Western Hill-Country.* Jerusalem as a summer residence, 295. Record of

thermometer, 296–297. Comparisons, 297. Other plains, further north, 298.

*Western Plain.* Higher temperature; thermometer, 299.

*Valley of Jordan.* Sunken valley; greater heat, 299. Thermometer, 299–300. Southern production, 300.

*Eastern Hill-Country*, temperature little known, 301.

*Times of Harvest*, as marking temperature, 301. In the Ghôr, 301. In the western plain, 301. At Hebron, Jerusalem, etc., 302. Results, 302. Melons at Tiberias, 302.

III. WINDS.

Only four winds spoken of in Scripture, 302. These to be taken with latitude, 303.

*Winds of the Rainy Season.* The rain wind is from the S. W. or W. S. W., 303. The east wind the next most frequent; brings a clear sky, 303. Other winds of winter variable, 304.

*Winds of Summer.* The most prevalent is from the N. W. quarter, cool and pleasant, 304. South wind or Sirocco (east wind), disagreeable, 305. Characteristics, 305. Duration, 305. Sirocco from the S. E., 305; from the S.W., 306, 307. Is probably *east* wind of Scripture, 307. Other summer winds variable, 307.

IV. PURITY OF THE ATMOSPHERE.

Summer sun and sky, 307. Transparency of the air, distinctness of objects, 308. Occasional haziness, 308. Climate generally salubrious, 308. Pestilence, 308. In Jerusalem what causes produce fever and ague, 309, 310.

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## CHAPTER IV.

### GEOLOGICAL FEATURES.

Preliminary remarks, 311.

I. GENERAL LIMESTONE FORMATION, 311. The great masses forming the basis are Jura limestone, 312. West of Jordan, 312. Around Jerusalem and Bethlehem, 313. East of the Dead Sea and Jordan, 313.

II. SANDSTONE, CONGLOMERATE, MARL, 313, 314.

III. VOLCANIC TRACTS. *West of the Ghôr*, 314. Extent, Safed the centre, 315. Chasm of Jordan below the Hûleh, 315. Wady et-Teim, 316. Tell el-Kâdy, 316. Clumps of basaltic rocks, 316. *Extinct Craters*, near Safed, etc., 317, 318.

*East of the Ghôr.* Igneous rocks near Bâniâs, Jebel Heish and its line of Tells, 318. Between the Huleh and the lake of Tiberias, 318. Eastern shore of the latter lake, 319.

*Haurân*, the plain, the Lejah, and the mountains, 319. The plain, 320. The Lejah, 321; description of, 321. The mountain, volcanic, with many extinct craters, 321. The eastern desert volcanic, extent, 321. el-Harrah, its character, 321. el-Safa, frightful, 322. er-Ruhbeh, an oasis, 223. Jebel 'Ajlûn and el-Belka, 323. Lava and volcanic rocks on east shore of Dead Sea, 323. Great volcanic tract of northern Syria, 324.

IV. EARTHQUAKES. Not unfrequent, 324. Imagery of Hebrew poets, 324. Four mentioned in Scripture, 324. Others recorded, 325. Many of northern Syria did not extend to Palestine, 326. Earthquakes, of A. D. 1170, 1202, 1759, 1834, 1837, 326. Jerusalem comparatively spared, 327. Note of Editor, 327.

# APPENDIX.

## PHYSICAL GEOGRAPHY OF THE SYRIAN COAST.

Note by the Editor, 332.

*General features of the Syrian Coast*, 333. Syria proper including ancient Phenicia, 334. *Mountains, valleys, plains*, 335. Mount Amanus and the adjacent country, 335. Mount Casius, 335. Valley of the Orontes, 337. Junia, Lebanon, 338, 344. Anti-Lebanon, 345, 346. Bûkâ'a, 347. Wady et-Teim, 348. East of the mountains, 349.

II. *Waters*, 350. The Orontes or el-'Asy, 351. The Leontes or Lîtâny, 354. No streams of importance north of Orontes, 358. Nahr el-Kebîr, 358. Nahr el-'Arûs, the Sabbath river, 359. The Adonis, or Nahr Ibrahim, 360. The Lycus or Nahr el-Kelb, 360. The Tamyras (Damouras) or Nahr ed-Dâmûr, 361. The Awaly (Bostrenus), 361. The Barada (Chrysorrhoas), or Amana, 362. The Pharpar, 362. Fountains, 365, 366.

III. *Climate*, 366. Rainy and dry seasons, 367–370. Winds, 370. Climate of Syria healthy, 371.

IV. *Geological features*, 372. Formation of mountains, 373. Mineral productions, 374. Mineral fountains, 376. Soil, 376.

V. *Trees and plants*, 377. Exuberance of Botany, 381. *Beasts, Birds, etc.*, 381. Birds, 383. Reptiles, 384. Insects, 385. Note of Author, 386.

INDEX . . . . . 387

# INTRODUCTION.[1]

THE GEOGRAPHY OF THE BIBLE has its central point in PALESTINE, or the HOLY LAND. This was the seat of the Jewish nation and of their history for more than fifteen centuries. In accordance with Jehovah's promise to Abraham, HE brought the Hebrews out of Egypt, and planted them in the Land of Promise; converting them from a cluster of nomadic tribes into a nation of fixed abode and agricultural habits. They were Jehovah's own chosen people, separated from all other nations. HE was to them, in a peculiar sense, their GOD and national Protector. His glory was enthroned among them in the temple at Jerusalem. Only among that people was the true God known, while all the rest of the world was shrouded in the darkness of idolatry. Only from that land has gone forth, to other nations and to modern times, all the true knowledge which exists of God, of his Revelation, of a Future State, and of Man's Redemption through Jesus Christ.

What a mighty influence for good has thus proceeded from that little territory, to affect the opinions and destinies of individuals and of the world, for time and for eternity!

[1] The Introduction, as already stated in the Preface, was intended for the whole of the great work but a small part of which the late author was allowed to finish. See Preface.

Compared with it, the splendor and learning and fame of Egypt, Greece, and Rome fade away; and the traces of their influence upon the world become as the footprints of the traveller upon the sands of the desert.

The land of PALESTINE, while it is thus the central point and nucleus of all Biblical Geography, is itself only the middle portion of that long and narrow tract which lies along the eastern coast of the Mediterranean, and stretches continuously from Asia Minor on the north to the Red Sea proper on the south. The remarkable configuration of this extended strip of territory binds its several parts together as one whole; but this whole tract is separated from all other countries, and almost isolated, by seas upon the west and by deserts on the east. Only at its northern extremity is it connected with the mountainous ranges of Asia Minor.

The remarkable feature of the region here in question, is the great longitudinal valley extending through nearly its whole length, from Antioch to the Red Sea. The northern portion is watered by the Orontes, flowing north, which at Antioch breaks through the western mountain to the Mediterranean. Then follows the Bŭkâ'a, between Lebanon and Anti-Lebanon, with its stream, the Lîtâny, flowing south, which forces a passage around the southern end of Lebanon to the sea near Tyre. The valley of the Jordan succeeds, with its river and three lakes, the Hûleh, the lake of Tiberias, and the Dead Sea. Between the latter and 'Akabah, the great valley, here known as Wady el-'Arabah, is without water; but further south it is occupied by the eastern gulf of the Red Sea, the Gulf of 'Akabah. The sides of this great valley sometimes rise to lofty mountains, as in Lebanon and Hermon; and again, in some parts, for a short distance sink to plains, as at Hums and Beisân. On the other hand,

the valley itself, along the Jordan, with its two large lakes, is deeply depressed below the level of the Mediterranean.

Let us now suppose this long tract of territory divided into four parts, by three lines, not wholly straight, drawn from the coast towards the east. Let the first begin on the north of the river Eleutherus, now Nahr el-Kebîr, and pass along the northern end of Lebanon, through el-Husn and Hums. The second may be drawn on the south of Tyre, and through the lower sources of the Jordan, at the southern base of Hermon. The third may be carried from near the southeastern corner of the Mediterranean along at some distance on the south of Beersheba and of the Dead Sea. Now, of the four divisions thus formed, the northernmost is Northern Syria, which does not now come further under consideration. The second comprises Lebanon and Anti-Lebanon, with Phenicia on the west, and Syria of Damascus on the east. The third is PALESTINE proper, lying on both sides of the Jordan, and extending from Dan to Beersheba; including, also, in the southeast, the lands of Moab and Ammon. The fourth and southernmost, besides the desert and Sinai, takes in also the land of Edom on the east of the 'Arabah.

The FIRST VOLUME of this work treats specially of PALESTINE, with the two contiguous divisions, LEBANON and SINAI. These constitute the CENTRAL REGION. The former, Lebanon, is included because it was in great part comprised within the original boundaries of the twelve tribes; and the latter, because it was the scene of the wanderings of Israel, as they came up out of Egypt to take possession of the Promised Land. Another reason why such should be the extent of the first volume, is found in the fact that the author of this work has visited and traversed in various directions just

these three divisions, — this Central Region, — and can therefore to a large extent speak of them as an eye-witness.

For the Second Volume there remain the Outlying Regions ; which, though extending around Palestine on almost every side, are yet separated from it by intervening seas, or deserts, or mountains. Beginning with Northern Syria, we find this district connected towards the northeast with the mountains which stretch eastward from Asia Minor, and spread into the rugged country of Armenia, in whose recesses the great rivers Euphrates and Tigris have their source. As these streams roll on southward to the Persian Gulf, they traverse and embrace the vast plains of Mesopotamia, so intimately connected with the earliest and latest history of the Hebrew nation ; the seats too of the mighty kingdoms of Assyria and Babylon. Eastward of these plains rise the chains of mountains which separate them from ancient Media and Persia. Proceeding from these regions across the Persian Gulf, we reach Arabia, stretching along the Red Sea, and beyond that sea, Ethiopia, on the upper Nile, followed by Egypt in the lower valley of the same river. Again returning to Northern Syria, we find it connected towards the northwest with the provinces of Asia Minor, followed in the west by Greece, with its islands, and Italy.

It is worthy of remark, in respect to the countries lying out of Palestine, that the Old Testament has to do mainly with those in the east and south, including Egypt ; while, on the other hand, the New Testament refers almost exclusively to those in the west.

It is seen at a glance, from this survey, that while Palestine, the central region, was in ancient times in a manner isolated from all other countries, it yet formed the middle

point of intercourse and communication between the most populous and powerful nations of Asia, Africa, and Europe. The hosts of Egypt swept over it on their march to oriental conquest; those of Assyria, Babylon, and Persia, in like manner, overran it on their way to subjugate the valley of the Nile; while in later times the Macedonian conqueror took his route across it into the east, and the Romans held it as a convenient thoroughfare to their more distant oriental dominions. All this implies, not an intercourse of war alone, but also of commerce and the arts.

We may thus perceive the wisdom of the divine counsels in planting in this narrow and apparently isolated land the people to whom the knowledge of the true God and of the gospel was to be revealed, in order that they should make it known to other nations. Probably from no other spot in the ancient world could this knowledge have been spread abroad, in all directions, so widely, so constantly, and for so long a series of ages.

## SOURCES.

1. The main source of all Biblical Geography is, of course, THE BIBLE itself. The outline must be drawn wholly from the pages of sacred writ, and is then to be filled up by information derived from every quarter possible.

The Bible does not usually specify distances, nor give descriptions of places; yet, in certain cases, the method of enumeration may aid us to a certain extent. For example:

(*a.*) In the book of Joshua, xv.–xix., the enumeration of cities and towns allotted to the different tribes proceeds in no definite order; yet they are often mentioned *in groups*, showing that they lay near each other, but not in what direction from each other; see Josh. xv. 55, 58.

(*b.*) In naming places along a journey or the march of an army, it is to be presumed that they lie in the order specified. So the approach of the Assyrian host towards Jerusalem, Isa. x. 28–32; the progress of Tiglath-pileser, 2 K. xiv. 29.

(*c.*) Rarely a special description is given; as of Shiloh, Judg. xxi. 19. By following this description, Shiloh (now Seilûn) was first visited and identified in 1838.

2. Next to the Bible, the works of *Josephus*, the Jewish historian, are the most important source for the history and geography of his people. Not that his accounts are always fully reliable; yet, when he speaks of places and the distances between them along the great roads, we may well give

him credit; for these were matters of public notoriety. He alone has given a description of the city of Jerusalem as it was in the time of Christ.

3. The existence, at the present day, of very many ancient scriptural names of places, still current among the common people of Palestine, has been a fertile and important source of information. This is a purely native and national tradition; not derived in any degree from the influence of foreign masters or convents. The affinity of the Hebrew and the modern Arabic has contributed greatly to preserve the ancient names. Indeed, so tenacious is this kind of tradition, that all the efforts of the Greeks and Romans to displace the native appellations by others derived from their own tongues, were unavailing. The sounding names Diospolis, Nicopolis, Ptolemais, and Antipatris have perished for centuries; while the more ancient Lydda (Ludd), Emmaus ('Amwâs), 'Akka, and Kefr Sâba, are still current among the people. Yet a very few Greek names, thus imposed, have maintained themselves; as Neapolis (Nâbulus) for Shechem, Sebaste (Sebŭstieh) for Samaria.

It was by tracing out these scriptural names, heard from the lips of the common people, that most of the ancient places identified within the last five and twenty years have been discovered. Yet here, again, caution is necessary. The mere name decides nothing, unless the other circumstances correspond.

## EPOCHS.

The history of Sacred Geography, from its beginning in the fourth century to the present time, exhibits four epochs, dividing it into three unequal periods. These epochs are marked by works on Palestine, each embodying all the

knowledge of its time and period, and thus serving to show the progress or decay of Biblical Geography.

I. The first epoch is marked by the ONOMASTICON of Eusebius and Jerome. This is the earliest work on Biblical Geography. It was written in Greek by Eusebius, bishop of Cæsarea, about A.D. 330; and was translated into Latin, with a few corrections and additions, by Jerome the monk of Bethlehem, towards the close of the same century. It is an alphabetical list of names of scriptural places, with a brief notice appended to each of its position, and often of its distance from some other place. This little work is of high importance, although the notices do not always rest on historical facts, and are sometimes colored by legendary tradition. Nor are the two writers always of one accord.

The Onomasticon is the work nearest to the times of the New Testament; yet there intervened three centuries which are wholly blank. Nearly coeval with it was the *Itinerarium Hierosolymitanum*, or Jerusalem Itinerary, written in Latin by a pilgrim from Bourdeaux in A.D. 333. The part relating to the Holy Land is brief, but valuable.

During the fifth and sixth centuries, there is no record of travels in Palestine. At the beginning of the seventh, there is the Itinerary of *Antoninus Martyr* of Placentia, about A.D. 600; and at the close of the same century, about A.D. 697, the treatise of *Adamnanus de Locis sanctis*, being a report of the visit of the French bishop *Arculfus* to the Holy Land. In the eighth century followed the pilgrimage of *St. Willibald* about A.D. 765; and in the ninth, the Itinerary of the monk *Bernhard the Wise*, about A.D. 870. These are all the travels in Palestine of which there remains any record; until the arrival before Jerusalem of the first host of the crusaders, at the close of the tenth century, in June,

1099. But although the Franks maintained a footing in Palestine (in 'Akka, at least), for nearly two centuries, until 1291; yet the historians and travellers of the times of the crusades have left comparatively few notices of importance relating to the geography of the land.

II. The Latin treatise of the monk BROCARDUS, *Locorum Terræ Sanctæ Descriptio*, written about A.D. 1283, marks the second epoch; and gives us what was known of Palestine by the Latin monks and ecclesiastics at the close of the crusades. Though less brief than the Onomasticon, it is also less full and complete; and serves to show, that, during the long interval of nine centuries, much had been forgotten by the church which still existed among the common people.

The three following centuries served to extend and fix the dominion of ecclesiastical tradition. The travellers, whose works have been preserved, and who lodged in the convents, repeated, for the most part, only what they had learned from the monks. In the first quarter of the fourteenth century, however, we have the important Arabic work of *Abulfeda* on Syria; and that of the Jewish writer *Parchi*, long a resident in the land. Among travellers, the more important names are, *Ludolf of Suchem*, about 1340; *Breydenbach* and *F. Fabri*, in 1483; *Pierre Belon*, in 1546; and *Cotovicus* (Kootwyk), in 1598.

III. The third epoch is constituted by the work of QUARESMIUS, *Terræ Sanctæ Elucidatio*, completed in 1625, and afterwards published in two folio volumes. Ecclesiastical tradition was still in its palmy days; and this work affords the best exposition of it. It is interminably prolix, and, so far as the true topography of the land is concerned, is indefinite and of little value.

In the latter part of the seventeenth century we have the

valuable works of *d'Arvieux* and *Maundrell*. The monks continued to be the main source of information. Even the keen-sighted Maundrell, though he obviously places little reliance on these accounts, yet gives nothing better in place of them.

In the eighteenth century, the chief travellers were *R. Pococke* and *Hasselquist*. The latter, a pupil of Linnæus, turned his attention particularly to the Botany of the country.

The early part of the present century furnished several travellers of the highest character, both as observers and narrators; such were *Seetzen*, 1803–10; *Burckhardt*, 1809–16; *Irby and Mangles*, 1817, 1818. In recent years, a more thorough exploration of the land has been undertaken in almost every direction; and very much of that which had been long forgotten has already been recovered. *Russegger* in 1836 examined the Geology of Palestine; and *Schubert*, in 1837, the Natural History. In 1838 and 1852, the author of this work, with *Eli Smith*, collected the materials for the Biblical Researches in Palestine. They were followed, in various years, by *E. G. Schulz* and *W. M. Thomson;* in 1843 by *J. Wilson;* in 1845 by *T. Tobler* in Jerusalem; and in 1855 by *J. L. Porter* in Damascus and Haurân. The *American Expedition*, in 1848, made known the physical features of the Dead Sea and the Jordan; and gave rise also to the able Geological Report of Palestine by *Dr. H. J. Anderson*. In 1852, *Lieutenant Van de Velde* travelled throughout the countries west of the Jordan, to obtain the materials for his new Map of the Holy Land.

IV. The middle of the present century may therefore be regarded as a new and fourth epoch in the history of Biblical Geography. It is distinctly marked by the great work of Carl Ritter, *Vergleichende Erdkunde der Sinai Halbinsel, von*

*Palaestina und Syrien ;* that is, " Comparative Geography of the Sinai Peninsula, of Palestine, and Syria ; " four vols. octavo, 1848–1855. This is a portion of the author's larger work on Comparative Geography. In it, as a vast storehouse, is brought together all that relates to the geography of Palestine and Syria, gathered from the travellers and historians of all periods and countries.

The notices of Ancient Palestine by Greek and Roman writers are found best collected in the still classic work of *Hadr. Reland, Palaestina ex monumentis veteribus illustrata,* Traj. Batav. 1714, quarto. This has ever been, and yet remains, the standard classic work on Ancient Palestine.

In respect to the modern state of the countries here treated of, — the Central Region, — the chief source of information and reference in this work is naturally the author's own published volumes upon the Holy Land. Indeed, so far as relates to the country west of the Jordan, the present volume may be regarded, to a certain extent, as the systematic presentation of the author's own personal observations, made in the country itself, and more fully recorded from day to day in his Biblical Researches in Palestine.

Note. — The full titles of all the works referred to, and of many others on Palestine, may be seen in the Appendix to the Biblical Researches.

# PHYSICAL GEOGRAPHY

OF

# THE HOLY LAND.

# PALESTINE.

## NAME.

PALESTINE, or PALESTINA, now the most common name for the Holy Land, occurs three times in the English version of the Old Testament; and is there put for the Hebrew name פְּלֶשֶׁת, elsewhere rendered *Philistia*.[1] As thus used, it refers strictly and only to the country of the Philistines, in the southwest corner of the land. So, too, in the Greek form, *Παλαιστίνη*, it is used by Josephus.[2] But both Josephus and Philo apply the name to the whole land of the Hebrews; and Greek and Roman writers employed it in the like extent.[3]

The earliest and native name was *Canaan*, כְּנַעַן, *Χαναάν*, or *Land of Canaan*.[4] This word signifies "a low tract;" in contrast perhaps to אֲרָם, *Aram*, or Syria; that is, "the higher tracts" of Lebanon and Syria. It would therefore strictly apply only to the plains along the coast; and it is so used for Philistia and for Phenicia.[5] But it is also frequently used as comprising the whole country west of the Jordan.[6]

[1] Ex. xv. 14; Isa. xiv. 29, 31; Ps. lx. 8, lxxxvii. 4, cviii. 9.

[2] Antiq., 1. 6. 2; Ibid., 2. 15. 2.

[3] Joseph. Antiq., 8. 10. 3. Philo, Opera (ed. Mangey), II. pp. 20, 106, 457. Hdot., 1. 105. Strabo, 16. 4. 18.

[4] Gen. xii. 5, xvi. 3; Ex. xv. 15; Judg. iii. 1.

[5] Philistia, Zeph. ii. 5. Phenicia, Isa. xxiii. 11, in Hebrew and Septuagint. Comp. Obad. xx.

[6] Gen. xii. 5; Num. xxxiii. 51, xxxiv. 2; Josh. xxi. 2, xxii. 9; Acts xiii. 19. Joseph. Antiq., 1. 6. 2; Ibid., 2. 15. 3.

Palestine is known as *the Promised Land*, because it was promised of God to Abraham.[1]

It is called *the Holy Land*, once in Scripture,[2] and now commonly; as having been, with the Hebrews, its inhabitants, a peculiar possession of Jehovah, where his glory was revealed for ages, and where later the Messiah became flesh and dwelt with men. For all who hold to the one only true God it is to this day *the Holy Land*, as the original seat and source of all true religion.

Other names, derived from the different appellations by which the inhabitants were known, require no illustration. Such are: *Land of the Hebrews*, *of Israel* or *the Israelites*, *of the Jews*, etc. So too *the Land of Judah*, or *Judea;* which, though strictly referring only to the southern part of the country, are sometimes in popular usage applied to the whole.

## BOUNDARIES AND EXTENT.

The country promised to Abraham, and described by Moses, was bounded on the west by the Mediterranean, and on the east by the Jordan.[3] Only at a later period the portion of two and a half tribes was assigned to them on the east of the Jordan. The northern boundary, as we shall see hereafter, included Phenicia and Mount Lebanon.[4]

Of the southern border we have two specifications, — one by Moses, and the other, as the southern border of the tribe of Judah, in the division of the land by Joshua.[5] According to these accounts, the southeastern corner of the land was the desert of Zin, in the 'Arabah, at the south end of

[1] Gen. xii. 7, xiii. 15, xvii. 8; Ps. cv. 9, 11.

[2] Zech. ii. 12.

[3] Num. xxxiv. 6, 12.

[4] Num. xxxiv. 7, 8; comp. Josh. xiii. 5.

[5] Num. xxxiv. 3–5; Josh. xv 1–4.

the Dead Sea, adjacent to the border of Edom. The boundary line began at the tongue or bay of the sea, looking southward, and passed up the ascent of Akrabbim to Zin, and so on southward to Kadesh-Barnea; thence it was carried by Hezron, Adar, Karkaa, and Azmon, to the brook or torrent of Egypt, and ended at the Mediterranean. The earlier account omits Hezron and Karkaa; and for Adar, it has Hazar-Addar.

Of the places here enumerated, only a few are known. By the "tongue" or bay of the sea is perhaps to be understood the shallow portion on the south of the peninsula. Perhaps the line began at the mouth of the Wady el-Ahsy, which appears to have separated Edom from Moab. The ascent of Akrabbim is probably the line of cliffs running across the 'Arabah a few miles south of the Dead Sea, forming merely the ascent to the higher level of the great valley further south.[1] Kadesh is to be sought in the valley, on its western side, probably at 'Ain el-Weibeh, the chief watering-place of the Arabs in the whole region.[2] None of the other places towards the west are known, until we reach "the brook or torrent of Egypt," near the southeastern corner of the Mediterranean, afterwards the site of *Rhinokorura*, and now called Wady el-'Arîsh.

For the purposes of the present work, we assume as the southern boundary the parallel of Lat. 31° N. This is sufficiently near, and divides Moab and Edom correctly. But there must be a slight curve towards the south in order to include Kadesh.

The western border is of course the Mediterranean; the eastern is the desert.

[1] Biblical Researches in Palestine, II. pp. 116, 120 [II. pp. 494, 501].— The second numbers refer to the first, the first to the second edition of this work.

[2] Ibid., II. pp. 174, 193 [II. pp. 582, 610].

For the northern boundary, we assume a line beginning near the northern base of the *Promontorium Album*, now Râs el-Abyad, south of Tyre, in about Lat. 33° 10′ N., and drawn slightly north of east, and curving so as to take in Kâna, the fortress Tibnîn, and also Hûnîn, until it strikes near Dan and Bâniâs at the southern base of Hermon, in Lat. 33° 16′ N. On this parallel the line continues to the eastern desert. This desert may be said to constitute the eastern border of Palestine.

The *length* of the territory thus included, is, as we have already seen, 136 minutes of latitude; that is, 136 geographical miles, or 158 English miles. The breadth is greatest near Gaza, in about Long. 34° 31′ E. from Greenwich; and at the promontory of Carmel, nearly in Long. 34° 58′ E. It may be estimated as not far from 90 degrees of longitude at these points, — equal to about seventy-five geographical miles, or from eighty-five to ninety English miles. But if measured by *hours* along the roads, both the length and breadth would appear much greater.

The whole area of the land of Palestine, consequently, does not vary greatly from twelve thousand geographical square miles, — about equal to the area of the two States of Massachusetts and Connecticut together. Of this whole area, more than one half, or about seven thousand square miles, being by far the most important portion, lies on the west of the Jordan.

# CHAPTER I.

## THE SURFACE — GENERAL FEATURES.

The striking feature in the aspect of the country, consists in the four long parallel tracts or strips of territory into which the land naturally divides itself; two of them low, and two elevated. They are as follows:

I. The low plain along the coast, interrupted only at the northern end and at Carmel. See under Plains.

II. The valley or plain of the Jordan, depressed in great part below the level of the Mediterranean. See Valleys.

III. The range of hill-country and mountains west of Jordan, extending from Lebanon south, throughout the land, and interrupted only at the plain of Esdraelon.

IV. The range of hill-country and mountains east of Jordan, extending from Hermon south, throughout Bashan, Gilead, and Moab. East of the lake of Tiberias, the high plateau spreads out into the plain of Haurân.

In describing more fully the features of each of the above divisions, we begin always from the north.

# SECTION I.

## MOUNTAINS AND HILL-COUNTRY.

The Hebrew word הַר, *a mount, mountain*, is used in a wider sense than the corresponding English word. It is applied not only to the loftiest mountain, but also to what in English is simply *a hill*. It is sometimes properly so rendered in the English version ; as *the hill Samaria ;* and also, in the plural, *the mountains of Samaria* would with more propriety be rendered *the hills* of Samaria.[1] So, too, the singular is often used collectively ; as *Mount Ephraim* for *the mountains of Ephraim*, *Mount Judah* for the *mountains* or *hill-country of Judah*, and the like.

### I. MOUNTAINS WEST OF THE JORDAN.

#### 1. North of the Plain of Esdraelon.

The hill-country between the plains of the coast and the valley of the Jordan connects with the southern end of Lebanon near Sidon, and extends southward, at first as a broad, elevated tract of rolling and mostly arable land, skirted on the east by the great valley, and on the west by the narrow Phenician plain. South of the parallel of latitude 35° 16′ N., our northern boundary of Palestine, it rises gradually and becomes more rugged. On the east, it overlooks the Jordan valley by a steep descent. On the west, it spreads itself out in masses of rocky ridges and cliffs, intersected by deep and

[1] 1 Kings xvi. 24; Jer. xxxi. 5.

wild valleys quite to the sea, between the plains of Tyre and 'Akka. Here it forms the promontories Râs el-Abyad and Râs en-Nâkûrah; the former being the *Promontorium Album* of the ancients, and the latter the *Scala Tyriorum* or Ladder of Tyre.[1]

A high point in this district is a lofty hill just west of Ramah in Asher, called Belât; and having upon it the columns and ruins of a rude, antique temple. The view from it is extensive on every side, and includes the whole coast, from Tyre on the north to 'Akka and Carmel on the south. It is a wild district; though with much tillage, and more pasturage.

More elevated is the region lying west of that part of the Jordan which flows between the lake Hûleh and that of Tiberias. Here are the proper mountains of Naphtali; though the whole district, as far north as Kedesh, is once, and but once, spoken of in Scripture, collectively, as *Mount Naphtali*.[2] The town of Safed stands upon a lofty hill, and is conspicuous from every quarter; the elevation being, according to Symonds, two thousand seven hundred and seventy-five feet above the sea. Further west is a higher tract of mountains, terminating towards the north in a fine cliff or bluff, near Gaza, called Jebel Jermûk from a village upon the ridge. It is the highest peak in Galilee, and rises not less than a thousand feet or more above the level of Safed, or nearly four thousand feet above the sea. The ridge runs off southwest for six or eight miles, where it sinks into lower hills; while at the same point another elevated ridge runs from it westward, at an acute angle, and as a high mountain skirts the

[1] Joseph. Bel. Jud., 2. 10. 2. Comp. D'Anville's Map of Palestine. Ritter, Th. XVI. pp. 809, 813, 814.

[2] Josh. xx. 7.

north side of the plain of Ramah. As seen from the south, these mountains appear quite lofty, and are, indeed, the highest in Galilee.[1] The hill-country, which here skirts the plain of 'Akka, is high, though mostly arable.

South of the plain of Ramah, a lower and narrow ridge separates it from another plain. On this ridge is Tell Hazûr, a high point with no trace of ruins.[2] Beyond the second plain a broad ridge, or rather double range of elevated hills, separates it from the beautiful plain of Zebulun, now called el-Bŭttauf. This range of hills is probably the mountain *Asamon* of Josephus, not far from Sepphoris.[3] From this plain southward the country is rolling, with some elevated tracts, like the hill or ridge above Nazareth, the Wely on which is everywhere conspicuous.

Eastward from the plain el-Bŭttauf, and situated in a lower plain, is the village of Hattîn; above which, on the south, Kŭrûn Hattîn, 'horns of Hattîn,' known in Latin tradition as the *Mount of the Beatitudes*, where our Lord is said to have delivered the Sermon on the Mount. This tradition, however, cannot be traced back beyond the age of the crusades; and the Greek church does not acknowledge it.[4] The spot was signalized, in 1187, by the complete overthrow of the host of the Franks by Saladin.[5] The singular character of the hill may have given rise to the tradition. As seen from the high southern plain, it is about a quarter of a mile in length from east to west, with a higher point at each end; but is nowhere more than some sixty feet above the plain. On reaching the top, however, it is found to lie along the very border of the

[1] Lat. Biblical Researches, pp. 72–77. [2] Ibid., p. 81.

[3] Joseph. Bel. Jud., 2. 18. 11.

[4] Biblical Researches, II. p. 371 [III. p. 238].

[5] See the account in Biblical Researches, II. p. 372 sq. [III. p. 240 sq.].

southern plain, where this sinks down at once by a precipitous offset to the lower plain of Hattîn. From this latter the northern side of the Tell rises, very steeply, not much less than four hundred feet.[1]

The hills and rolling country bordering the plain of Esdraelon on the north, sink down on its western quarter, gradually, and run out as low ridges and disappear in the plain. Further east, around Nazareth, the hills are higher. That on the west of Nazareth rises to the height of about sixteen hundred feet, and affords one of the finest views in all Palestine.[2] Those skirting the plain are also high and precipitous. One of them, a precipice of rock overlooking the plain, is called by the Latins the *Mount of Precipitation*, as being the supposed spot where the people of Nazareth were about to cast our Lord down "from the brow of the hill whereon their city was built." A more clumsy legend hardly exists, among all those which have been fastened on the Holy Land. It does not reach back beyond the time of the crusades; and the spot itself is some two miles distant, south by east, from Nazareth.[3]

Nearly S. E. by E. from Nazareth, at the southeastern corner of these higher hills, but isolated from them, and jutting out into the northeastern arm of the great plain, which sweeps around it in the south and east, rises gracefully the MOUNT TABOR of scriptural history, the *Itabyrion* or *Atabyrion* of the Septuagint and Greek writers.[4] Its name among the Arabs is Jebel et-Tûr. It is a beautiful moun-

[1] Biblical Researches, II. p. 370 [III. p. 238].

[2] See Biblical Researches, II. p. 336 [III. p. 189].

[3] Luke iv. 28–30. Biblical Researches, II. p. 338 [III. p. 187].

[4] Sept., Hos. v. 1 Ἰταβύριον; comp. Pierson's Comm. *in loc.* Onomast., Article *Itabyrion*. Polyb. 5. 70. 6. Ἀταβύριον.

tain, wholly of limestone, standing out prominently upon its plain; the latter being strictly table-land, several hundred feet above the level of the lake of Tiberias. As seen from the southwest, the mountain appears like the segment of a sphere; looking at it from the W. N. W., the form inclines more to the truncated cone. A low ridge connects it in the W. N. W. with the adjacent hills; and from this ridge ascends the ancient and still usual road to the summit. This is the most feasible path, steps being in some places cut in the rock; yet there is no part of the mountain where it could not easily be ascended on foot, and in most places, also, without much difficulty, on horseback.[1]

There is good soil on the sides of the mountain all the way up, and grass grows everywhere luxuriantly. The sides are mostly clothed with bushes and orchards of oak trees (*ilex* and *ægilops*), with also occasionally the Butm (*pistacia terebinthus*), like the glades of a forest, presenting a beautiful appearance and fine shade. The top of the mountain now consists of a little oblong plain or basin, extending from N. W. to S. E., with ledges of rock on each side. In ancient times it was the site of a city, Tabor; remains of which, as also of fortifications out of different periods, are still visible. The height of Tabor is given at eighteen hundred and sixty-five feet above the sea, or about thirteen hundred and fifty feet above the general level of the plain.

The view from Tabor is extensive and beautiful. In the southwest and west are seen the great plain and Carmel, the hills around Nazareth, and portions of the Mediterranean more to the right. In the north and northeast are Safed

[1] See generally the description in Biblical Researches, II. p. 351 sq. [III. p. 210 sq.].

and the mountains of Naphtali, with Hermon and its icy crown beyond, while near at hand is traced the outline of the deep basin of the lake of Tiberias, in which only a small portion of the lake itself is visible. Beyond the lake the eye takes in the table-lands of Jaulân and Haurân; and further south, beyond the Jordan, the higher mountains of Bashan and Gilead. Towards the south, the view is mostly shut in by the ridges of Little Hermon and Gilboa. As seen from Tabor, Mount Gilboa lies to the left of the Little Hermon, and appears somewhat higher.

Mount Tabor is mentioned several times in the Old Testament; first as on the border of Issachar and Zebulun, and then as the place where Deborah and Barak gathered the women of Israel before their great battle with Sisera.[1] The Psalmist exclaims: "Tabor and Hermon shall rejoice in thy name;" selecting these two as the representatives of all the mountains of Palestine and its borders, — the former as the most graceful, and the latter as the loftiest.[2] There was also in those days a city of the same name upon the summit, which belonged to Zebulun, but was assigned to the Levites.[3] No mention is made of Tabor in the New Testament.

The historian Polybius relates, that, about 218 B. C., Antiochus the Great of Syria "came to Atabyrion, a place lying on a breast-formed height, having an ascent of more than fifteen stadia; and by stratagem he got possession of the city, which he fortified.[4] According to Josephus, a

[1] Josh. xix. 22; comp. vs. 12; Judg. iv. 6, xii. 14. Joseph. Antiq., 5. 1. 22. Ibid., 5. 5. 3.

[2] Ps. lxxxix. 12; comp. Jer. xliv. 18; Hos. v. 1.

[3] 1 Chron. vi. 77. Perhaps the city is referred to in Josh. xix. 22.

[4] Polyb., 5. 70. 6.

battle took place at Mount Itabyrion, about 53 B.C., between the Romans under Gabinius, and the Jews under Alexander, in which ten thousand of the latter were slain.[1] At a later period, Josephus himself fortified Mount Tabor, along with several other places.[2] Still later, and after Josephus had been made prisoner, a great multitude of the Jews took refuge in this fortress; against whom Vespasian sent Placidus. By a feint he drew off a large number to the plain and cut off their return, and thus compelled the remainder, who were straitened for water, to surrender.[3]

Tabor is often mentioned by Eusebius and Jerome in the fourth century. At that time the legend had become current that this mountain had been the place of our Lord's transfiguration. This is contradicted by the fact that a fortified city then occupied the summit. The testimony of the Evangelists also goes to show that the transfiguration took place whilst our Lord and his apostles were in the region of Cesarea Philippi.[4]

On the eastern part of the great plain of Esdraelon, rise two parallel mountain ridges, Little Hermon and Gilboa, running from west to east, and separating the whole tract between Tabor and the hills of Samaria into three parts, like arms, extending eastward from the plain. The northern arm, between Tabor and Little Hermon, sweeps round on the east of Tabor; that in the middle, between Little Hermon and Gilboa, is the great valley of Jezreel, and sinks down as a broad and fertile plain to the Ghôr or Jordan

[1] Joseph. Antiq., 14. 6. 3. Bel. Jud., 1. 8. 7.

[2] Joseph. Vita, § 37. Bel. Jud., 2. 20. 6.

[3] Joseph. Bel. Jud., 4. 1. 8.

[4] Onomast., Articles *Thabor*, *Itabyrium*, etc. Matth. xvii. 1 sq.; Mark ix. 2 sq., Luke ix. 28 sq. Comp. Matth. xvi. 13; Mark viii. 27. See more in Biblical Researches, II. p. 358 [III. p. 222].

valley; the southern one, between Gilboa and the hills of Samaria, slopes up gradually eastward to a considerable elevation.

The ridge of *Little Hermon* begins at a point north of Zer'în (Jezreel), and rises rapidly to its highest elevation of not far from eighteen hundred feet, about S. by W. of Tabor. Near the summit is a village, ed-Dŭhy, which now gives its name to the mountain, Jebel ed-Dŭhy. The ridge soon sinks again into a tract of table-land, which continues to the border of the Jordan valley. This *Hermon* is not mentioned in Scripture; and the name Hermon is first applied to it by Jerome, in the fourth century.[1] But the towns of *Shunem* (Sôlam) on its western end, and *Endor* on its northeastern quarter, belong to scriptural history.

The ridge of *Mount Gilboa* has its beginning a little S. E. from Zer'în, and rises rapidly at first, and afterwards more gradually, till it attains its highest elevation in its eastern part, near the village Fukû'a, from which it is now called Jebel Fukû'a. It is higher than Little Hermon, and perhaps than Tabor. A little further south is another village, now Jelbôn, representing an ancient *Gilboa*, from which, doubtless, came the ancient name of the mountain. The general course of the ridge is E. by S. The northern side, overshadowing the valley of Jezreel, is very steep and rocky; indeed, little is to be seen except the bare wall of rock. Near the Ghôr, this northern side sweeps round in an arc of a circle, and the mountain then forms the western side of the Ghôr for some distance south. The southern ridge of the mountain rises quite gradually, and is everywhere cultivated and inhabited.

Mount Gilboa is celebrated in Scripture as the scene of

[1] Hieron. Opera (ed. Martianay), IV. ii. pp. 552, 677.

the great battle between Israel under Saul and the Philistines, in which the former were totally routed, and Saul and his three sons slain. The Philistines pitched first at Shunem, on the west end of Little Hermon, and Israel over against them on the western part of Mount Gilboa; but afterwards they descended, the Philistines to Aphek, and Israel to the fountain in the valley.[1] A more than usual interest is given to this battle, by the previous interview of Saul with the witch of Endor, on the north side of Little Hermon; and by the touching lamentation of David over Saul and Jonathan.[2]

About W. by S. from Tabor, and in the western quarter of the plain of Esdraelon, rises the southern end of MOUNT CARMEL. This mountain runs as a long straight ridge of compact limestone, from S. S. E. to N. N. W. about fifteen miles in length, until it terminates as a high promontory on the coast of the Mediterranean. It forms the southern headland of the bay of 'Akka. The ridge of Carmel is connected with the northwestern part of the hill country of Samaria by a range of lower rounded hills, about ten miles in length, running between the two in the same line with the mountain itself, and separating the plain of Esdraelon from that of Sharon.

On its northeastern side the mountain falls off steeply, and sometimes precipitously, with little of tillage except along the foot, but sprinkled over with noble oaks, and rich in pasturage. The southeastern line of hills is, on this side, naked of trees, but grassy; contrasting strongly with the mountain itself. The long crest of Carmel is a tract of table-land. Towards the S. W., the side of the mountain

[1] 1 Sam. xxviii. 4, xxix. 1, xxxi. 1–13.
[2] 1 Sam. xxviii. 7–20; 2 Sam. i. 17–27.

sinks down gradually into wooded hills, with well-watered valleys, presenting to the eye a district of great beauty, rich in tillage and pasturage, declining gently into the southern plain and the adjacent lower hills. In the different character of its two sides, Carmel greatly resembles Lebanon; though on a much smaller scale. Hence "the glory of Lebanon," and "the excellency of Carmel," are fitly spoken of together.[1]

The northwestern extremity of Carmel, a bold and lofty promontory, rises imposingly from the sea to an elevation of at least five hundred feet.[2] On its top is a celebrated convent of the Carmelite order. The crest of the mountain rises gradually and evenly towards the S. S. E. for about two thirds of the whole length. The highest point is a short distance northwest of Esfia, where the elevation is estimated at eighteen hundred feet. It then sinks gradually in like manner to the southeastern end; having at that point near the village el-Mansûrah an elevation of sixteen hundred and thirty-five feet.

At the southern end of Carmel, and along its eastern base, comes down a narrow valley, Wady el-Milh, which lies between the mountain and the lower rounded hills, that stretch off southeast as far as Lejjûn. Up this valley lies the inland road from 'Akka to Ramleh, on the east of Carmel; and by it the French army approached 'Akka in 1799. A road along the shore, perhaps more travelled, passes around the promontory of Carmel, between it and the sea.

Mount Carmel has its name כַּרְמֶל, *garden*, from its fertility and beauty; as also from its abundance of blossoms.

[1] Isa. xxxv. 2.

[2] Schubert gives six hundred and twenty feet; Symonds only four hundred and eighty-nine feet. The mean is five hundred and fifty-four feet.

Besides its oaks and other forest trees above, and its olive and other fruit trees farther down, the mountain is gay with multitudes of flowers, such as hyacinths, jonquils, anemones, and many others.[1] In ancient times, also, the vine flourished on its southern slopes; as around Hebron and on Lebanon. Hence Carmel is often employed by the sacred writers as a type of beauty. The head of the spouse in Canticles is as Carmel; and to the renovated wilderness is promised both "the glory of Lebanon" and "the excellency of Carmel and Sharon.[2] As such, too, Carmel is coupled with Tabor, with Bashan, and with Lebanon.[3] On the other hand, the withering of Carmel marks utter desolation and the judgments of God.[4] The prophets Elijah and Elisha occasionally resorted to this mountain; and here the Shunamite found the latter.[5] At Carmel, likewise, took place the miraculous sacrifice of Elijah; at which the four hundred and fifty prophets of Baal were slain.[6]

In respect to this sacrifice, it may be remembered that the whole land was now suffering in the third year of drought and famine;[7] and that, of course, all the streams and fountains of the land were dried up, except the very few which are perennial. The river Kishon was dry, as it now is almost every summer, above its permanent sources; which lie along the foot of Carmel, below the point where the river reaches that mountain. The direction of Elijah

[1] O. v. Richter, p. 65. Schubert enumerates the names of nearly fifty species of trees and plants, merely as a specimen of what a traveller meets with on Carmel; Reise, III. iii. 212.

[2] Cant. vii. 5; Isa. xxxv. 2.

[3] Jer. xlvi. 18; Mic. vii. 14; 2 Kings xix. 23; Isa. xxxvii. 24.

[4] Amos i. 2; Nahum i. 4.

[5] 1 Kings xviii. 19, 42; 2 Kings ii. 25; iv. 25.

[6] 1 Kings xviii. 17-46.

[7] 1 Kings xviii. 1, 2.

was to "gather to him all Israel *unto* Mount Carmel;"[1] not to the summit, where there was no standing-place for such a multitude, and no water either for them or for the sacrifice.[2] All these circumstances go to show that the transaction took place at the foot of the mountain, perhaps at some Tell, near the permanent fountains of the Kishon. It was also at the part of Carmel nearest to Jezreel; and therefore near the southeastern quarter of the mountain.[3] After the fire of the Lord had fallen upon Elijah's offering, and the priests of Baal had been put to death, Elijah with his servant went up for the first time to the top of Carmel.[4] Josephus, in giving an account of the same sacrifice at Carmel, says nothing to imply that it was offered upon the summit.[5]

The New Testament contains no allusion to Mount Carmel. Among the heathen it was in high repute, and was the seat of an oracle. Scylax calls it "a mountain sacred to Jupiter:" and Jamblichus relates, that, because it was more sacred and inaccessible than other mountains, Pythagoras often resorted alone to its temple.[6] Tacitus says, in speaking of Carmel: "Thus they call the mountain and the god. Neither statue to the god, nor temple, so the ancients have handed down; only an altar and worship.[7]" Here Vespasian

[1] 1 Kings xviii. 19.

[2] 1 Kings xviii. 33–35.

[3] 1 Kings xviii. 44–46.

[4] 1 Kings xviii. 42.

[5] Joseph. Antiq. 8. 13. 5, 6. A recent hypothesis assumes, as the place of the sacrifice, the summit of the southern point of the ridge of Carmel, distant two or three hours (or at least five miles) from the permanent sources of the Kishon. One writer thinks the water might have been brought from a fountain two or three hundred feet below the summit; but this fountain the Rev. W. M. Thomson afterwards saw nearly dried up, during the heat of an ordinary summer.

[6] Reland, Palæstina, pp. 329, 432. Jamblich., Vita Pythag. c. 3.

[7] Tacitus, Hist. 2. 78: "Est Judæam inter Syriamque *Carmelus;* ita vocant montem deumque. Nec simulacrum deo, aut templum, sic tradidere majores: aram tantum et reverentiam." Comp. Movers, I. p. 670.

offered sacrifice; and the priests prophesied that he would become emperor.[1] All this shows, that here was a heathen altar and oracle; and the place of it is, by all analogy, to be sought upon the promontory overlooking the sea.

In the days of monkish asceticism, Carmel was thronged with hermits dwelling in cells in the rocks; partly, perhaps, natural, and partly excavated. Very many of these cells are yet to be seen.[2]

### 2. South of the Plain of Esdraelon.

The range of hill-country and mountains west of the Jordan, as we have seen, is completely interrupted by the great plain of Esdraelon. This plain, in its general level, nowhere rises more than some four hundred feet above the Mediterranean. Through its middle arm, the valley of Jezreel on the east, and the valley of the Kishon along the base of Carmel in the west, it thus affords an easy and comparatively level roadway between the Jordan and the bay of 'Akka.

South of the plain of Esdraelon, the hill-country rises again gradually until around Hebron it reaches an elevation of about two thousand eight hundred feet above the Mediterranean. South of Hebron it again declines, until the hills terminate not far from Tell 'Arâd and Beersheba.

The eastern line of this hill-country, along the valley of the Jordan, begins with the southeastern portion of the mountains of Gilboa, which turns south along that valley for a few miles. Then succeeds a tract of hills and broken ridges, ending in the bluff el-Makhrûd, on the north side of

[1] Suetonius, Vespas. c. 5: "Apud Judæam Carmeli Dei oraculum consulentem, ita confirmæ vere sortes, ut, quidquid cogitaret volveretque animo, quantum libet magnum, id esse proventurum, pollicerentur."

[2] O. v. Richter, p. 65. Jac. de Vitr. Hist. Hierosol. p. 1075.

the plain of Wady Fâri'a. South of that plain runs down the frowning promontory of Kŭrn Sŭrtabeh; and beyond it a line of mountain wall skirts the valley, extending along the Dead Sea and far beyond. This wall rises from one thousand to fifteen hundred feet above the depressed valley, is everywhere steep and sometimes precipitous, and is often cleft to its base by the deep valleys and gorges that issue from the mountains. All is irregular and wild; presenting, especially along the Dead Sea, scenes of savage grandeur.

The western line of the same hill-country begins near Lejjûn and Um el-Fahm, where the range of hills coming from Carmel unites with those of Samaria. From Um el-Fahm there is a wide prospect over the western plain; and after travelling a short distance southeast, we have views of the whole plain of Esdraelon. The western line is in general less distinct and marked than the eastern; though in some parts it is equally high and precipitous. Thus in the northern portion it is much broken, and declines westward rapidly into a tract of lower hills. Indeed, it is not till we come opposite to Lydda and Ramleh that we find the steep ascent or mountain wall. Here the height between the two Beth-horons is not less than one thousand feet; and the same is the case between Lâtrôn and Sârîs. South of Zorah the steep wall mostly ceases; and the hill-country, as such, terminates north of Beersheba.

Along the whole western base of the mountainous region, lies a tract of lower hills, varying in breadth, forming the middle region between the mountains and the plain, and interrupted only occasionally, as at Zorah, by a spur or promontory from the mountains. This tract is, for the most part, a beautiful open country, consisting of low hills, usually rocky, separated by broad arable valleys mostly well

adapted for grain, as are also many of the swelling hills. The whole tract is full of villages and deserted sites and ruins, and there are many olive groves. In some parts, as towards the north, it may be difficult to draw the exact line between the mountains and this lower tract; but as seen, for example, from the tower of Ramleh, the dark frowning mountains of Judah rise abruptly from the tract of hills at their foot.

The breadth of the upper monntainous region, from the eastern to the western brow, is some fifteen or twenty miles. It is strictly an elevated plateau, — a region of irregular table-land. The surface is everywhere rocky and uneven; sometimes spreading into smaller plains, often rising into mountain ridges which run in all directions; and in every part cut up by deep valleys and ravines, which cleave their way to the lower tracts upon the east and west, to the Jordan or the Mediterranean. The water shed along this high plateau follows in general the height of land; and is in great part indicated also by the course of the great road from Hebron to Jerusalem, Nâbulus, and Jenîn. Yet, in this whole course, the heads of the valleys, which run off in different directions, often interlap; so that sometimes a valley which descends to the Jordan has its head a mile or two westward of the beginning of other valleys, which run to the western sea.

One feature of this high mountain plateau has been disclosed only since the discovery of the deep depression of the Dead Sea and Jordan valley. That sea lies (in round numbers) thirteen hundred feet below the level of the Mediterranean.[1] The eastern brow of the mountain overhanging the

[1] More exactly thirteen hundred and seventeen feet, according to the level of Lynch and Dale.

Dead Sea, is thirteen hundred feet above it; or almost precisely on the level of the western sea. Jerusalem is two thousand six hundred feet above the Mediterranean; while the western mountain brow is two thousand feet above the same.[1] Hence, in the slope from Jerusalem to the western brow, there is a descent of six hundred feet; while in that from Jerusalem to the eastern brow, a distance not much greater, the descent is two thousand six hundred feet; a difference of two thousand feet! This remarkable feature is chiefly conspicuous south of Kŭrn Sŭrtabeh. The enormous descent of the eastern slope is very marked, as seen from the hill of Taiyibeh and the Mount of Olives; and is fully felt by the traveller in passing from Hebron or Carmel of the south to the Dead Sea.[2]

This whole tract of mountains south of the great plain, is spoken of in Scripture in two divisions, under names drawn from the larger Hebrew tribes which had them in possession. The northern portion are the *Mountains of Ephraim*, which in the English Version are referred to only collectively as *Mount Ephraim*;[3] the southern are the *Mountains of Judah*, or collectively (in the English Version) once as the *Mountain of Judah*, and thrice as the *Hill-Country of Judah*.[4] Once the two portions are designated as the *Mountains of Judah*, and the *Mountains of Israel*.[5] The line of division appears to have been the border between the tribes of Benjamin and Ephraim, which also was later the boundary

[1] By the same level, the height of the road below Sârîs is nineteen hundred and eighty-nine feet above the Mediterranean.

[2] Comp. Biblical Researches, I. pp. 499, 501 [II. pp. 202, 204].

[3] Josh. xvii. 15; Judg. vii. 24, ix. 4; Jer. l. 19, etc.

[4] Josh. xi. 21, xv. 48; 2 Chron. xxi. 11, xxvii. 4. Coll. Josh. xx. 7, xxi. 11. Greek, ἡ ὀρεινὴ τῆς Ἰουδαία, Luke i. 39, 65.

[5] Josh. xi. 21.

between the kingdoms of Judah and Israel. It lay between Bethel on the north, and Ramah and Beeroth on the south. The following places are said expressly to be in Mount Ephraim; namely, Shechem, Shamir, Timnath-Serah, Ramathaim-Zophim, and Deborah's palm-tree between Ramah and Bethel.[1]

The *Mountains of Samaria*, in the plural, are once put by Jeremiah for Mount Ephraim, which stands in the next verse. So also once in Amos.[2]

Twice in the book of Joshua the *Mountains of Israel* are named, instead of what is elsewhere Mount Ephraim.[3] But in the prophet Ezekiel the phrase *Mountains of Israel* occurs often; and includes the mountains of both the kingdoms Judah and Israel.[4]

From this general description, we now turn to enumerate the particular mountains named in Scripture in connection with this hill-country.

*Mountains of Ephraim — The Mount or Hill of Samaria*, in the singular, is the fine mound-like eminence on which the city of Samaria was built. It stands in the midst of an extensive basin, shut in all around by higher hills and ridges.[5] The situation is one of great beauty. The hill itself and the country around are fertile and highly cultivated.

Mount Ebal and Mount Gerizim belong together, both in

[1] Shechem, Josh. xx. 7; 1 Kings xii. 25. Shamir, Judg. x. 1, 2. Timnath-Serah, Josh. xix. 50, xxiv. 30. Ramathaim-Zophim, 1 Sam. i. 1. The palm tree, Judg. iv. 5.

[2] Jer. xxxi. 5, 6; Amos iii. 9.

[3] Josh. xi. 16, 21.

[4] Ez. xxxvii. 22; comp. vi. 2, xix. 9, xxxiv. 13, 14, xxxix. 2, 4, etc.

[5] 1 Kings xvi. 24; Amos iv. 1, vi. 1. See Biblical Researches, II. p. 304 [III. p. 138].

position and in history. They form the highest part of the mountain wall which skirts the long plain of the Mŭkhna on the west. North of the middle of the plain, where this wall is the highest, it is cleft to the bottom by the narrow valley running up northwest, in which stands Nâbulus, the ancient Shechem. The mountain on the north is *Ebal;* that on the south, *Gerizim.* The valley is not more than five or six hundred yards wide at the bottom; and the mountain brows are so near together, that persons upon them might easily be heard form one to the other over the deep valley below. The elevation of Gerizim only has been measured, and amounts to two thousand six hundred and fifty feet above the sea, or about eight hundred feet above Nâbulus. As seen from the east, Ebal appears to be a hundred feet or more higher,[1] — apparently the highest land in all Mount Ephraim.

Both Ebal and Gerizim rise in steep, rocky precipices immediately from the narrow valley. The sides of both, as seen from the valley, are equally naked and sterile; although some have chosen to describe the side of Gerizim as fertile, and that of Ebal alone as sterile. The only exception in favor of Gerizim, is a small ravine coming down opposite the west end of the city, which is full of fountains, fruit trees, and verdure. In other respects, the sides of both mountains, as here seen, are desolate, except where a few olive trees are scattered upon them. The side of Ebal, along the foot, has many ancient sepulchres cut in the rock. The modern name of the southern mountain is Jebel et-Tûr.

A walk of twenty minutes leads from the city up along the ravine to the top of Gerizim; which is found to be a tract of fertile table-land stretching off far to the west and

[1] Later Biblical Researches, p. 298.

southwest. Twenty minutes more southeast, along nearly level ground, leads to the eastern brow (or angle) of the mountain, where the ground is somewhat higher, overlooking the large plain below with its smaller eastern arm, and all the country in the east and northeast, with Hermon in the distance. The top of Ebal is here seen to be of the same character, — an extensive tract of arable table-land.

Before the Hebrews entered Palestine, the Lord commanded Moses that they should set up on Mount Ebal great stones, plastered over, on which a copy of the whole law should be inscribed, and at the same time they should build an altar of whole stones, also on Ebal, and offer burnt offerings and peace offerings in token of rejoicing. On the same occasion the law was to be publicly read in the hearing of all the people. Six tribes, Simeon, Levi, Judah, Issachar, Joseph, and Benjamin, were to stand on Gerizim, to pronounce blessings on obedience; and the other six tribes, Reuben, Gad, Asher, Zebulun, Dan, and Naphtali, were to stand upon Ebal, to utter curses upon disobedience; and to these all the people were to respond, Amen.[1] All these solemn and imposing rites, including this public recognition of the law and covenant by the whole people, were duly carried out under Joshua, soon after the Hebrews entered the Promised Land, and immediately after the destruction of Ai.[2]

These mountains are not further named in Scripture; except that Jotham is said to have uttered his beautiful parable from the top of Gerizim.[3]

From later history it appears, that when the Jews returned from exile under Zerubbabel, and began to rebuild the temple at Jerusalem, the Samaritans, who had been mostly

[1] Deut. xxvii. 4-8, 11-26; comp. Deut. xi. 29.

[2] Josh. viii. 30-35.

[3] Judg. ix. 7.

brought into the land by Esar-haddon, intermingled perhaps with some of the lower class of people that had remained in the land, proposed to aid the Jews in their good work: "Let us build with you, for we seek your God, as ye do; and we do sacrifice unto him since the days of Esar-haddon." [1] It was the refusal of the Jews to grant this request that gave rise to the subsequent long-continued hostility and hatred between the two races. About 330 B.C., while Alexander the Great was occupied with the siege of Tyre, the Samaritans obtained from him permission to erect a temple of their own on Mount Gerizim, in which an apostate Jewish priest was made high priest.[2] The mutual hatred continued to increase; each party contending for the sanctity of their own temple. Wars occurred; and the temple on Gerizim was at length destroyed by John Hyrcanus, about 129 B.C.[3] In the times of the New Testament, the national enmity had not abated. "The Jews had no dealings with the Samaritans;" and the Samaritan woman places before Jesus the great question in dispute: "Our fathers worshipped in this mountain, and ye say that in Jerusalem is the place where men ought to worship." [4] In the subsequent centuries the Samaritans made several insurrections against the Roman power, until, in the reign of Justinian, about A.D. 529, they were finally subdued, and a strong fortress erected around a Christian church on Mount Gerizim.[5]

The site of their ancient temple is even now pointed out and venerated by the little remnant of Samaritans that still

[1] Ezra iv. 2.

[2] Joseph. Antiq., 11. 7. 2. Comp. Neh. xiii. 28. Biblical Researches, II. p. 289 [III. p. 117].

[3] Joseph. Antiq., 13. 9. 1. Bel. Jud., 1. 2. 6.

[4] John iv. 9, 20.

[5] See generally, Biblical Researches, II. pp. 293, 294 [III. pp. 123–125].

survives in Nâbulus. It is an area or platform of naked rock, even with the ground, with slight traces of former walls around it, and is regarded by the Samaritans as their holiest spot, where they always put off their shoes. It is their *Kibleh*, the spot towards which they always turn their faces during prayer, wherever they may be. Three times a year they also come up hither in solemn procession, to celebrate the three great Jewish festivals, — the passover, pentecost, and the feast of tabernacles.

The ruins of Justinian's fortress still exist in great confusion; exhibiting the massive Roman workmanship of a late age. Some have held them to be the remains of the Samaritan temple; but the Samaritans themselves do not acknowledge them, and have no respect for them.

Near by these ruins are also the foundations and remains of an ancient town or village which once occupied the summit of Gerizim.[1]

From *Mount Zalmon* (צַלְמוֹן) Abimelech and his followers cut down branches, with which to burn the tower of Shechem.[2] This could only be some part of Gerizim or Ebal, then covered with wood; since there is no other mountain near to Shechem. Whether the Salmon of the Psalmist was the same, is uncertain.[3]

At some distance S. W. by S. from the top of Gerizim, rises a conical summit, crowned by a Wely, or tomb of a Muslim saint, and hence called "Sheikh Salmôn el-Fârisy." Its elevation, or that of a like neighboring summit, is given by Symonds at two thousand three hundred and ninety-six feet. It has not usually been seen by travellers.[4]

[1] See generally, Biblical Researches, II. pp. 277, 278 [III. pp. 99–101].

[2] Judg. ix. 48, 49. [3] Psalm lxviii. 14.

[4] We twice saw it from a distance, once from the northwest, and again from the

Abdon, one of the judges of Israel, was buried in the *Mount of the Amalekites*, at Pirathon in Ephraim, now Fer'-ata southwest of Nâbulus. The town stands upon a Tell, which is probably the mount in question. The name is perhaps a reminiscence of Amalekites who anciently dwelt there.[1]

The phrase *Mount Bethel* can only refer to the elevated ground around the city of Bethel, especially on the east, north, and west; but there is no particular summit or hill. It occurs twice.[2]

*Mount Zemaraim* in Mount Ephraim, from which Abijah, king of Judah, addressed the host of Israel, was doubtless near the town Zemaraim, which was in Benjamin, between Jericho and Bethel.[3] The mountain probably was situated southeast from Bethel, near the border between the two kingdoms. After the defeat of Israel, Abijah proceeded to take Bethel and Ephraim (et-Taiyibeh), farther north.

The *Hill of Gaash*, on the north side of which Joshua was buried, was in the border of his inheritance in Timnath-serah (or Timnath-heres) in Mount Ephraim.[4] The site and ruins of Timnath in Ephraim were discovered in 1843 by the Rev. Eli Smith, some distance northwest of Gophna. Over against them, on the south, is a high hill; in the north side of which are excavated sepulchres, with porticos, of a higher style of architecture than is usual, except around Jerusalem. This is probably the hill Gaash.[5] Elsewhere the "brooks [valleys]

southeast. See Later Biblical Researches, pp. 135, 296. Mr. Wolcott took a bearing of it (S. 55° W.) from Gerizim. See Bibliotheca Sacra, 1843, p. 74.

[1] Judg. xii. 15; comp. v. 14. Later Biblical Researches, p. 134.

[2] Josh. xvi. 1; 1 Sam. xiii. 2.

[3] 2 Chron. xiii. 4–19; comp. Josh. xviii. 22.

[4] Josh. xxiv. 30; Judg. ii. 9; comp. Josh. xix. 49, 50.

[5] Bibliotheca Sacra, 1843, pp, 481, 496.

of Gaash" are mentioned; referring, I presume, to the deep valleys round about this hill, through which the winter torrents flow to Wady Belât.[1]

*Mountains of Judah.* — Thus far the particular mountains described are among the mountains of Ephraim. Those which follow belong to the mountains of Judah.

The *Hill of Gibeah* is not directly named in Scripture, though it is referred to. Josephus speaks of it as *a hill* (λόφος) thirty stadia north of Jerusalem.[2] It is the present Tuleil el-Fûl, an isolated conical hill, just on the east of the great northern road, where it forms a very conspicuous object. On this hill the Gibeonites hanged the seven sons of Saul before the Lord; and this was followed by the touching manifestation of maternal tenderness by Rizpah, the concubine of Saul.[3]

Epiphanius speaks of a mountain *Gabaon* (Gibeon), as being higher than the mount of Olives. This could only be the present height of Neby Samwîl, near Gibeon, the probable site of ancient Mizpeh. The ridge begins not far towards the northeast, and rises rapidly to the high point in question, and then sinks off gradually southwest into lower hills. To judge by the eye, it is the highest point of land in the whole region. Symonds gives its elevation at two thousand six hundred and forty-nine feet; which is apparently too low, being lower than the mount of Olives.[4]

The Mount of Olives, or Olivet,[5] is several times referred to, both in the Old and New Testaments. The present Ara-

[1] 2 Sam. xxiii. 30; 1 Chron. xi. 32.

[2] Joseph. Bel. Jud., 5. 2. 1.

[3] 2 Sam. xxi. 6, 9, 10. Biblical Researches, I. pp. 577–579 [II. pp. 114, 115].

[4] Epiphan. adv. Hæres, Lib. I. p. 394. Reland, p. 345. Biblical Researches, I. p. 457 [II. p. 139].

[5] See Biblical Researches, I. p. 274 sq. [I. p. 405 sq.].

bic name is Jebel et-Tûr. It lies on the east of Jerusalem, from which it is separated by the deep and narrow valley of Jehoshaphat. It here forms the steep eastern side of that valley; and is usually said to have three summits. Of these, the middle one, and apparently the highest, is directly opposite the city, and has been wrongly assumed, by a very early tradition, as the place of our Lord's ascension. From this spot one looks down upon Jerusalem, as upon a map. Further east is a somewhat higher point, with a Muslim Wely, from which there is a wide view of the Dead Sea, the Jordan valley, and the mountains beyond. The northern summit is about a mile distant from the middle one, is nearly or quite as high, and commands a similar view. The ridge between the two curves somewhat eastwards, leaving room for the valley below to expand a little in this part. On the south of the middle summit, the ground sinks down into a lower ridge, over against the well of Nehemiah, called now by Franks the mount of Offence, in allusion to the idolatrous worship established by Solomon "in the hill that is before [eastward of] Jerusalem."[1] Across this part passes the usual road to Bethany; while another, more direct but much steeper path, leads over the middle summit. The elevation of the middle summit, near the church, is given by Schubert at two thousand seven hundred and twenty-four feet; being four hundred and forty-four feet above the valley of Jehoshaphat.

Over Mount Olivet David took his way in his flight from Absalom.[2] Here our Lord wept over Jerusalem.[3] Near Bethany, on its eastern slope, he ascended to heaven, and

[1] 1 Kings xi. 7, 8.

[2] 2 Sam. xv. 30; comp. Zech. xiv. 4.

[3] Luke xi. 41; comp. vs. 37.

from that spot the disciples returned to the city across the mount.[1]

Nearly south of Jerusalem, at the distance of seven or eight miles, and southeast from Bethlehem, is seen the Frank mountain, so called; known among the Arabs as Jebel Fureidîs. It is a striking feature in the landscape, rising steep and round, precisely like the cone of a volcano, but truncated. The height above the base cannot be less than from three to four hundred feet; and the base itself has at least an equal elevation above the bottom of Wady Urtâs in the southwest. There are traces of terraces around the foot of the mountain, apparently for cultivation. The top of the mountain is a circle of about two hundred and fifty feet in diameter. The whole of this is enclosed by the ruined walls of an ancient circular fortress, built of hewn stones of good size, with four massive round towers, standing one at each of the cardinal points. The view from the summit is extensive towards the north, but less so in other directions. On the east the prospect is bounded by the mountains of Moab beyond the Dead Sea; but of that sea itself only a small portion is visible, because of intervening mountains.[2]

There is no reference to the Frank mountain in Scripture, unless it was perhaps the site of the *Beth-haccerem* of Jeremiah; where the children of Benjamin were to "set up a sign of fire," while they blew the trumpet at Tekoa.[3] Jerome says that there was a village Bethacharma, situated on a mountain between Tekoa and Jerusalem.[4] All this accords well enough with the position of the Frank mountain; and it would be a most fitting spot for a signal fire. More definite, perhaps, is the account that here was the site of He-

[1] Luke xxiv. 50, 51; Acts i. 12.
[2] Biblical Researches, I. p. 478 [II. p. 170].
[3] Jer. vi. 1; comp. Neh. iii. 14.
[4] Hieron., Comm. in Jer. vi. 1.

rodium, a city and fortress built by Herod the Great, and which also was his place of sepulture.[1]

In or near the valley of Rephaim, southwest of Jerusalem, at a place called Baal-perazim, David twice defeated the Philistines.[2] In allusion to these overthrows, the prophet Isaiah speaks of a *Mount Perazim* (פְּרָצִים, *breaches*), apparently near the same place.[3] It was very probably the high ridge northwest of Bethlehem, between Wady Ahmed and Wady Bittîr; which, as seen from the north, appears quite elevated.[4]

Other single mountains, among the mountains of Judah, are mentioned in connection with the northern boundary of the tribe of Judah. Such are the following:

The northern border of Judah passed up through the valley of Hinnom, on the south of Jerusalem, "to the top of the mountain before the valley of Hinnom westward; which is at the end of the valley of Rephaim northward."[5] This mountain or hill could only be the low hill west of the valley of Hinnom, over against Zion, now terraced and planted with fruit trees. It lies south from the upper part of the valley of Hinnom, and north of the valley of Rephaim.[6]

From the top of that hill, the border passed to the fountain of Nephtoah, "and went out to the cities of *Mount Ephron;* and was drawn to Baalah, which is Kirjath-jearim."[7] If, now, the fountain of Nephtoah, as is probable, was at 'Ain Kârim, the largest fountain in that region, then the border ran from the valley of Hinnom to Kirjath-jearim, in nearly

[1] Joseph. Antiq., 15. 9. 4. Bel. Jud., 1. 21. 10; comp. Bel. Jud., 4. 9. 5. Biblical Researches, I. pp. 480, 481 [II. pp. 172–174].

[2] 2 Sam. v. 18, 20, 22, 25; 1 Chron. xiv. 9, 11, 13, 16.

[3] Isa. xxviii. 21.

[4] Later Biblical Researches, p. 159.

[5] Josh. xv. 8, 9.

[6] Later Biblical Researches, p. 159.

[7] Josh. xv. 9.

a straight line. If Nephtoah be sought at one of the small fountains in Wady el-Werd, then the border made a curve towards the south. In either case, however, the *Mount Ephron* on its course could only be the high ridge running from northeast to southwest, between the deep valley which passes down by Kŭlônieh and 'Ain Kârim on the east, and the eastern branch of Wady Ghŭrâb on the west; the same ridge on which are now the lofty sites of Sôba and Kŭstŭl.

Towards the southwestern extremity of the same high ridge is now situated the village of Kesla, representing the ancient *Chesalon*. In this part the ridge bore the name of *Mount Jearim*, — that is, mount of Forests, — as having been anciently covered with wood.[1]

From Kirjath-jearim, the border, it is said, "compassed westward unto *Mount Seir*, and passed along unto the side of Mount Jearim, which is Chesalon, on the north side; and went down to Beth-shemesh."[2] Here the natural explanation would seem to be, that from Kirjath-jearim westward, the border followed the high watershed, between the slope towards Wady Ghŭrâb on the south and the heads of valleys running towards the western plain on the north,[3] until it struck the head of the northwestern branch of Wady Ghŭrâb, near Sârîs. *Mount Seir*, then, was apparently the ridge along the southeastern side of that branch; and the border followed it to its termination in the fork of two branches. Thence it crossed to the north side of Mount Jearim, which is Chesalon (Kesla); and so passed down through the deep enclosed plain to Beth-shemesh.[4] The territory west of this part of the

[1] Josh. xv. 10. [2] Ibid.

[3] Later Biblical Researches, p. 156.

[4] If Mount Seir was the high ridge on the northwest side of the branch valley, looking towards the sea, along which we travelled, in 1852, from Mihsîr to Sârîs,

border, from Kirjath-jearim to Beth-shemesh, belonged to the tribe of Dan.[1]

*Hills near the seacoast of Judah.* — The coast of the Mediterranean, from its southeast corner northward to the vicinity of Joppa, is lined, with few interruptions, by sand-hills; some of which are large, and some in the course of ages have become covered with soil. Of these, three or four are mentioned.

The northern border of Judah was drawn from Beth-shemesh by Timnah to Ekron, and thence to *Mount Baalah*, Jabneel, and the sea. It passed through Ekron; for Ekron is named among the cities of both Judah and Dan.[2] Not far west of Ekron ('Akir), is a short line of hills, nearly parallel with the coast; west of which the great Wady Sŭrâr, here known as Nahr Rûbîn, passes down from the left to the sea. On one of the hills is the Wely, Neby Rûbîn; and on the west side of the stream is Yebna, the ancient Jabneel.[3] This line of hills is apparently the Mount Baalah of Scripture.

In the Apocrypha a *Mount Azotus* is spoken of, to which the right wing of Bacchides retreated; referring probably to the low round hill or Tell on which Azotus (Ashdod) was, and still is, situated.[4] Josephus speaks of the same place as *Mount Aza*; and Epiphanius as *Gazara* or *Gazarat;* meaning, perhaps, the similar eminence on which Gaza stands.[5]

Pliny mentions a *Mons Angaris* in connection with Gaza

it is difficult to see why the border should have crossed again to Mount Jearim, instead of keeping along the same ridge, and so passing down to Beth-shemesh.

[1] Josh. xix. 40-46.

[2] Josh. xv. 11, 45; xix. 43.

[3] Biblical Researches, II. p. 227 sq. [III. p. 21 sq.].

[4] 1 Mac. ix. 15. Biblical Researches, II. p. 33 [II. p. 368]. Richardson's Travels, II. p. 206. Tobler Dritte Wanderung, p. 26.

[5] Joseph. Antiq., 12. 11. 2, et Not. Biblical Researches, II. p. 37 [II. p. 375].

and Anthedon, and apparently towards Askelon.[1] It could hardly have been more than one of the sandhills.

In the book of Judges, it is narrated that Samson took the doors of the gate of Gaza, "and carried them up to the top of *the hill* that is *towards Hebron*."[2] About half an hour southeast of Gaza, near one of the roads to Hebron, is a partially isolated hill, with a Wely on it, called el-Mŭntâr; the highest point in the vicinity. Latin tradition has fixed upon this as the hill to which Samson bore off the gates; and the supposition is not improbable.[3]

### 3. Mountains overhanging the Ghôr and Dead Sea on the West.

The western side of the Ghôr, or valley of the Jordan, in its southern part, and also of the Dead Sea, is a succession of mountains and precipitous cliffs, as seen from the east. But as they thus overhang the deeply depressed valley and sea, their apparent elevation is all on that side; while, as seen from the west, they rise little, if any, above the high table-land and ridges behind them.

This general character of the western wall of the valley begins south of Wady Fâri'a, nearly east of Nâbulus. Here, skirting that low plain on the south, rises at once the high and imposing ridge of Kŭrn Sŭrtabeh, extending from northwest to southeast, and consisting of naked limestone rock. The northwestern end is the highest, and rises abruptly from among the lower ridges and valleys coming down from the west, so as to appear almost as an isolated ridge, only slightly connected with the high western region. As seen from the west, more in the direction of its length, it appears as a mass

[1] Pliny, Hist. Nat., 5. 13. v. 14. Reland, p. 345.

[2] Judg. xvi. 3. Not "*before* Hebron," as in the English Version.

[3] Biblical Researches, II. p. 39 [II. p. 377].

of naked, jagged ridges huddled together, with one main backbone running through the whole. This mountain extends far out into the Ghôr; and towards the southeastern extremity, where it is still high, is the horn (Kŭrn), not unlike that of a rhinoceros in form. Beyond this is a large shoulder; and then a low rocky ridge, reaching almost to the Jordan. Indeed, the valley of the Jordan is here contracted to its narrowest limits; and the ridge of Kŭrn Sŭrtabeh may be said to divide it into the lower and upper Ghôr. The elevation of Kŭrn Sŭrtabeh above the Mediterranean is given by Symonds at one thousand and twenty-eight feet, which makes it two thousand three hundred and forty-five feet above the Dead Sea. Along the valley of the Jordan, this mountain is everywhere a conspicuous object, whether looking up or down the Ghôr from the Dead Sea or from the Lake of Tiberias. In the neighborhood of Nâbulus it is not visible, by reason of intervening hills. Sŭrtabeh is mentioned in the Talmud, as the station next after the mount of Olives, where signal-torches were lighted and waved to announce the appearance of the new moon.[1]

Northwest from Jericho is the mountain Quarantana, so called as the supposed place of our Saviour's forty days' temptation. The Arabs have adopted this name under the form of Jebel Kŭrŭntŭl. The mountain rises precipitously from the valley, an almost perpendicular wall of rock, twelve or fifteen hundred feet above the plain, and is crowned with a chapel on its highest point. The eastern part is full of grots and caverns, where hermits are said once to have dwelt in great numbers. At the present day, as is reported, some three or four Abyssinians from the convent in Jerusalem come hither annually, and pass the time of Lent upon the moun-

[1] See generally, Later Biblical Researches, pp. 293, 294, 318.

tain, living only on herbs. There is nothing else remarkable about this naked cliff, to distinguish it from the other similar ones along the Ghôr and the Dead Sea further south. The tradition which makes this mountain the place of our Lord's temptation, as well as the name Quarantana, appears not to be older than the age of the crusades.[1]

Several similar cliffs stand out along the western shore of the Dead Sea; none of which, however, are alluded to in Scripture, and only one or two in other ancient writings. One of these is Râs el-Feshkhah, a conspicuous promontory jutting out E. N. E. into the northwestern part of the sea.[2] Another is the cliff above 'Ain Terâbeh, affording one of the finest views of the magnificent though desolate scenery of the Dead Sea. This was the starting point of the level run in 1848 by Lieut. Dale of the American Expedition, between the Dead Sea and Mediterranean; the elevation of the cliff or pass above the surface of the sea below it being found to be thirteen hundred and six feet.[3] A third cliff is Râs el-Mersed, situated north of the little plain of En-gedi ('Ain Jidy). This is perhaps the highest and most inaccessible of all the cliffs along the western coast of the sea; and its base, projecting into the water, cuts off all further passage along the shore, except when the water is quite low.[4]

This cliff, el-Mersed, and others adjacent, as also the high broken region further back, would naturally be the *mountains of En-gedi*, which some suppose Josephus to speak of.[5] At

[1] Biblical Researches, I. p. 567 [II. p. 303].

[2] Biblical Researches, I. pp. 531, 532 [II. p. 250].

[3] Biblical Researches, I. pp. 528-530, 612 [II. pp. 245-248].

[4] Biblical Researches, I. p. 506 [II. p. 212].

[5] Joseph. Antiq., 6. 13. 4. Reland here reads 'Ενγεδηνοῖς ὄρεσι, Palæstina, pp. 345, 763. But the only approved reading is 'Ενγ. ὅροις, *borders*.

any rate they include *the narrow passes* (τὰ στενά) *of En-gedi* which he mentions in the same place; and constitute *the wilderness of En-gedi* spoken of in Scripture, where David and his men dwelt "upon the rocks of the wild goats."[1]

Over against the northern part of the peninsula of the Dead Sea, rises conspicuously, like a large bulwark, the cliff Sebbeh, the site of the celebrated ancient fortress Masada, described by Josephus. It stands out a huge mass of rock, nearly isolated, having deep precipitous valleys on the north and south. The elevation above the Dead Sea is estimated at one thousand two hundred feet. The top is a nearly level area, about three quarters of a mile in length from north to south by one third of a mile in breadth. Here stood the ancient fortress; of which traces still remain, as well as of other buildings down to Saracenic times.[2]

Along the shore at the southwestern part of the Dead Sea lies the long ridge or mound known to the Arabs as Khashm Usdum; which latter word doubtless represents the ancient name *Sodom*. The remarkable feature of this mountain is, that the main body of it is a solid mass of rock salt. The ridge is about five miles in length by hardly more than one in breadth; and is strictly an outlier in front of the mountains proper, separated from them by the desolate valley, Wady el-Muhauwat, with its tracts of chalky, conical mounds. It is in general uneven and rugged; varying from one hundred to one hundred and fifty feet in height. The upper part is covered with layers of chalky limestone or marl, so as to present mostly the appearance of common earth or rock;

[1] Joseph. Antiq., 6. 13. 4. 1 Sam. xxiv. 1, 2.

[2] See Article *Masada*, in Part III. Joseph. Bel. Jud., 7. 8. 2 sq. Biblical Researches, I. p. 525 [II. p. 241]. Wolcott, in Bibliotheca Sacra, 1843, pp. 62–67. Lynch's Narrative, pp. 330–334. Anderson's Report, pp. 177–179.

yet the mass of salt below often breaks out, and appears on the side in precipices forty or fifty feet high and several hundred feet in length, mere crystallized fossil salt. The side of the mountain next the sea is often curiously furrowed into many conical or tent-shaped knolls. Sometimes pillars are thus formed in front of the precipices. Large lumps and masses also, broken off from above, lie like rocks along the shore, or are fallen down as *debris*. The very stones beneath the traveller's feet are wholly of salt. The lumps of salt are not transparent, but present a dark appearance; precisely like the salt obtained from the mines along the lower Danube.

About midway of the ridge, a cavern opens in front, on the level of the shore, and extends, as a narrow chasm, several hundred feet into the mountain. The rock is all fossil salt, and a torrent rushes through the chasm in the rainy season.[1]

No direct mention is made of this mountain of salt, either in Scripture or in Josephus. Yet its existence here enables us to fix the position, in a good degree, of the "Valley of Salt," where the Hebrews under David, and again under Amaziah, gained decisive victories over Edom;[2] and also of the "City of Salt," enumerated along with En-gedi as in the desert of Judah.[3] Both were doubtless so called because of their proximity to this mountain. The only direct mention in ancient times is by Galen, who, in speaking of the salt gathered near the Dead Sea, calls it "Sodom Salt,

[1] Biblical Researches, II. pp. 107–110 [II. p. 482 sq.]. Lynch's Narrative, p. 306 sq. Anderson's Geological Report, p. 181.

[2] 2 Sam. viii. 13; 1 Chron. xviii. 12; 2 Kings xiv. 7. Biblical Researches, II. p. 109 [II. p. 483].

[3] Josh. xv. 61, 62.

from the mountains round about the lake, which are called Sodom." [1]

In the book of Deuteronomy *the mountain of the Amorites* is spoken of as lying between Kadesh-barnea and the interior of the Promised Land.[2] This seems to refer to that portion of the western mountains south of the Dead Sea and along the southern Ghôr and Wady 'Arabah. While at Kadesh, the Hebrews, contrary to the command of God, attempted to ascend this mountain, and so enter Palestine; but were discomfited and driven back by the Amorites, who dwelt there. This name is here used broadly, as including also the Amalekites and other Canaanites.[3]

South of the Dead Sea, we also read of the *Maaleh (Ascent of) Akrabbim*, or "Scorpion Cliffs;" to which the south-eastern border of Judah was to be drawn from the Dead Sea, "from the bay that looketh southward;" and was thence to pass on to Zin and Kadesh-barnea.[4] This is apparently the remarkable line of cliffs which crosses the Ghôr obliquely six or eight miles south of the sea, and forms the step or offset, the dividing line, between the Ghôr and the higher level of Wady 'Arabah. This range of cliffs lies in an irregular curve, sweeping across the Ghôr in a general course from northwest to southeast; the length being seven or eight miles. The cliffs are of chalky earth, or indurated marl; and vary in height, in different parts, from fifty to one hundred and fifty feet. The face of the cliffs, though very steep, is not perpendicular; and they are much furrowed by the rains; so that the upper part presents a jagged appearance.

[1] Galen. de simpl. Medic. Facult., IV. p. 19. Reland, Palaestina, p. 243. Biblical Researches, II. p. 109 [II. p. 483].

[2] Deut. i. 19, 20, 44.

[3] Deut. i. 40–44; comp. Num. xiv. 40–45.

[4] Num. xxxiv. 3, 4; Josh. xv. 2, 3.

All along their base, fountains of brackish water ooze out, and form a tract of marshy land, overgrown with canes intermingled with shrubs and trees.[1]

### II. MOUNTAINS EAST OF THE JORDAN.

From the southeastern base of Jebel esh-Sheikh, the ancient Hermon, there is thrown off a broad ridge towards the south, which forms the eastern wall of hill-country along the upper Jordan to the lake of el-Hûleh. This range, although at first as high as the western mountains, soon declines towards the south. From the western base it rises, gradually and brokenly, to table-land on the top, on which, at some distance back, are seen a line of wooded hills (Tells), extending from north to south; the southernmost of which is Tell el-Feras. This broad ridge gradually sinks down towards the south, until it is lost in the table-land east of the lake of Tiberias. The present name of this mountain is Jebel Heish; but no mention of it has come down from ancient times.[2]

On the east of the lake of Tiberias stretches the table-land of Jaulân, the ancient Gaulonitis. As seen from the west, from Safed, it presents the appearance of a vast uneven plain, intersected by deep valleys and chasms running towards the lake. The view extends even beyond this district, and embraces a great part of Haurân, quite to the borders of the Lejah. Beyond, and towards the eastern desert, is seen Jebel ed-Derûz (Druze mountain), so called in the region itself, and elsewhere known also as Jebel Haurân.[3]

This is a mountainous tract running from N. E. to S. S. W.,

[1] Biblical Researches, II. pp. 116, 120 [II. pp. 495, 501].

[2] Later Biblical Researches, pp. 397, 401.

[3] Biblical Researches, II. p. 432 [III. p. 336].

some forty or fifty miles in length. It rises gradually from the north, is mostly volcanic, and lies in several ridges, interspersed with many isolated higher hills or Tells; some of them having extinct craters. One of these, Tell Abu Tumeis, in the northern part, is a lofty conical peak, perhaps five thousand feet high, and, standing out alone, is visible from a great distance.[1] The summit of the main ridge is an elevated plateau, on which rise the highest Tells or peaks of the Haurân, the Juwêlîl, Jêneh, Jefneh, the Kelb or Kuleib, etc. Until quite recently the Kuleib has been regarded as the loftiest summit of Haurân; and so it appears to those viewing it (as is usual) only from the west. But the measurements of Dörgens, in 1860, shows that Tell el-Jêneh, which stands further east, and is covered by the Kuleib, is still higher, having an elevation of about six thousand feet, while the height of the Kuleib is about five thousand seven hundred feet.[2] Still the Kelb or Kuleib Haurân,[3] as it is called, is the most conspicuous of all, rising as a lofty and graceful cone, and seeming to overtop the whole range. The Kuleib has an extinct crater opening towards the southwest.[4] The southern and eastern sides of the cone

[1] Porter's Damascus, II. p. 51. Wetzstein in Berl. Zeitschr. f. Erdk., 1859, Aug., p. 136.

[2] More nearly, el-Jêneh, five thousand six hundred and eighty Paris feet; el-Kuleib, five thousand three hundred and seventy Paris feet. Dörgens in Berl. Zeitschr. f. Erdk., Dec. 1860, p. 408.

[3] These words, *Kelb* and *Kuleib*, are written by Burckhardt with the letter Kâf; and so too by Eli Smith, and Tannûs his educated Arab companion, while travelling through this region in 1834. Thus written, the words signify 'dog.' Burckhardt, pp. 90, 92. Biblical Researches, 1841, App., p. 157. But according to the later authority of Porter and Wetzstein, they are pronounced with the guttural *Kóf*, and so signify 'heart.' Porter's Damascus, II. p. 133. Wetzstein, l.c., p. 136. Not improbably the pronunciation may vary in different districts.

[4] Dörgens, l.c., p. 408; comp. Wetzstein, l.c., p. 136.

are naked, the northern and western are clothed with oak forests.

South of the Kuleib, a lower ridge stretches off southward, as far as the eye can reach. The middle and southern portions of this mountain range exhibit many picturesque features; the northern portion is more tame; but all parts are described as very fertile. The sides of the mountain rise also very gradually, and with easy slopes and terraces of the richest soil.[1]

This mountain of Haurân is doubtless the mount *Alsadamus* of Ptolemy.[2] But is it referred to in Scripture? Once, and once only, is there mention of a "mount of Bashan;" but without any note of its position, whether within or upon the borders of that country.[3] The original district of Bashan, afterwards the *Batanaea* of the Greeks and Romans, would seem to have lain around and to have included the Jebel Haurân; and the northern portion of the same district bears to this day the same name, Ard el-Bethanyeh.[4] This was the nucleus of the kingdom of Og, king of Bashan, who, at the time of the approach of the Israelites to Palestine, had enlarged his domain so as to include the whole region east of Jordan and north of the Jabbok; extending from the Jabbok to Hermon, and from Hermon to Sulchah, now Sŭlkhad, on the southeastern quarter of Jebel Haurân.[5] These limits embraced Gaulonitis and Jebel Heish, or at least the

[1] Burckhardt, pp. 90, 92. Biblical Researches, 1841, App., p. 157. Porter's Damascus, II. pp. 51, 57, 133, 201.

[2] Ptol., 5. 15. Leake, Preface to Burckhardt, p. 12. Gesenius' Notes on Burckhardt, p. 505.

[3] Ps. lxviii. 16, 17, Heb.

[4] E. Smith in Biblical Researches, 1841, App., p. 158. Porter's Damascus, II. p. 57. Wetzstein, l.c., p. 194.

[5] Josh. xii. 4, 5, xiii. 11, 29 sq.; Deut. iii. 9, 10, 13; 1 Chron. v. 23.

eastern slope of the latter, quite to the base of Hermon. This kingdom of Og was subdued by the Hebrews, and assigned to the half tribe of Manasseh;[1] and it became the Bashan afterwards known to the Israelites and the sacred writers.

The Psalmist, in the passage referred to,[2] introduces and personifies the mountains of Palestine as jealous of Mount Zion, because Jehovah had made it his chosen seat. One of these, the mount of Bashan, he apostrophizes separately, apparently as the loftiest of all, and worthy to be the seat of Jehovah's worship. The force of the antithesis requires this interpretation. The mount of Bashan, then, can only be Mount Hermon, the loftiest of the mountains of Palestine and its borders by several thousand feet, and which may be said to cast its shadow over the whole land of Bashan.[3]

South of the river Yarmûk, the ancient Hieromax, the mountains again rise, rather suddenly, along the valley of the Jordan. Between the Yarmûk and the deep valley of the Zerka, the ancient Jabbok, they are now known as the district of Jebel 'Ajlûn. There is no ridge nor range of hills connecting them with Jebel esh-Sheikh or Jebel Heish. The intervening tract, the plain of Jaulân, presents, along the east side of the lake of Tiberias, the edge of a high plateau, intersected by deep ravines.[4]

These mountains constitute the northern portion of the land of Gilead, which lay between the Yarmûk on the north and the Arnon on the south, and was divided at about one third of the distance by the deep valley of the Jabbok, which cleaves the mountains to their base. This territory, in its

[1] Deut. iii. 13. [2] Ps. lxxviii. 16, 17, Heb.

[3] So too Gesenius, Ms. Lect. on Psalms, l.c. Hengstenberg's Comm. in loc.

[4] E. Smith in Biblical Researches, 1841, App., p. 162.

whole length, is often spoken of as the land of Gilead, and rarely as Mount Gilead.[1] The portions north and south of the Jabbok are each spoken of as "the half of Gilead";[2] though the northern is only two thirds as long as the southern, or about thirty geographical miles. This northern Gilead was subject to Og, king of Bashan, and was given to the half tribe of Manasseh.[3] It was in this northern *Mount Gilead*, that Laban overtook Jacob; and here too dwelt Gideon; whence perhaps we may account for the manner in which the latter once speaks of Mount Gilead.[4]

The chasm of the Jabbok is nearly opposite Nâbulus; and the mountains of 'Ajlûn, therefore, lie along the Jordan valley over against the lower western hills, which skirt the northern part of that valley. These higher eastern mountains reach their greatest altitude in the south, in the district el-Ma'râd, towards the Jabbok. The summits here are the loftiest beyond Jordan.[5] The greatest elevation, as compared with Jebel Jel'âd, may be estimated at about four thousand feet above the Mediterranean; equivalent to six thousand three hundred feet above the Dead Sea. As seen from Haurân and the desert further south, these mountains would seem to be not more than from one thousand to fifteen hundred feet above the plain.

The western side of this mountain ridge rises by rather steep slopes or steps, with intervening terraces and fertile tracts. The summit, in the northern part, forms a broad ridge of uneven table-land. There are various ridges and summits and isolated hills, and also deep valleys. Of these,

[1] Gen. xxxi. 21, 23, 25; Deut. iii. 12; Judg. vii. 3; Cant. iv. 1.

[2] Josh. xii. 2, 5, xiii. 31; Deut. iii. 12.

[3] Josh. xii. 5, xiii. 31; Deut. iii. 13.

[4] Gen. xxxi. 21, 23, 25; Judg. vi. 15, vii. 3.

[5] Burckhardt, Syria, p. 347.

two main ones, Wady Yâbis and Wady 'Ajlûn, run down to the Jordan. The whole mountain is well populated, and cultivated. Large portions of it, especially in the south, are still covered with forests and orchards of oaks of various kinds; among these, the oaks of Bashan. In 1834, Eli Smith travelled through it, and thus writes: "Jebel 'Ajlûn presents the most charming rural scenery that I have seen in Syria. A continued forest of noble trees, chiefly the evergreen oak (Sindiân), covers a large part of it, while the ground beneath is clothed with luxuriant grass, and decked with a rich variety of wild flowers. As we went from el-Husn to 'Ajlûn, our path lay along the very summit of the mountain; and we often overlooked a large part of Palestine on one side, and the whole of Haurân on the other."[1]

South of the Jabbok, and extending from it to the deep chasm of the river Arnon, is the range of mountains forming the southern portion of Gilead; and likewise spoken of as "half Mount Gilead;"[2] though it is longer by one half than the northern Gilead; being about forty-five geographical miles in extent from north to south. The modern name of the whole district is el-Belka. From the Jabbok and from the Jordan valley, the mountain rises steeply to a high uneven tract, on which, after an interval of two hours, lies the still higher ridge of Jebel Jel'âd (Gilead), so called from a ruined town upon it. This mountain extends from east to west six or seven miles in length, and its lofty western extremity overtops the whole of the Belka. On it is a Wely of Neby Osha' (Hosea); whence the mountain is also called Jebel Osha'. The elevation, according to Dörgens, is about

[1] Biblical Researches, 1841, App. p. 162. Later Biblical Researches, pp. 317, 318. Irby and Mangles, 1847, pp. 93, 147. Lord Lindsay, 1858, p. 272.

[2] Deut. iii. 12.

three thousand six hundred and fifty feet above the Mediterranean. From this summit there is a very wide and splendid prospect.[1] The slopes are clothed with forests of oak and other trees.

Near the southern foot of Jebel Jel'âd, surrounded by steep mountains, is situated es-Salt, probably the ancient *Ramoth-Gilead.* For six or eight miles south of es-Salt, the country continues hilly, richly wooded, and picturesque. Further south it spreads out into a high and wide plain, apparently on a level with the eastern desert, and bordered towards it by a chain of hills. This plain has many isolated hills or Tells, but has few trees. On such Tells are the ancient sites of the cities Eleale and Heshbon. The western portion of this plain is intersected with deep Wadys and precipices, affording at intervals a view of the Ghôr below; and is overgrown in many parts with fine woods. Such is the general character of this upper region, quite to the chasm of the Arnon, midway of the Dead Sea.[2]

Along the valley of the Jordan, quite to the Dead Sea, the western slope of the mountain rises gradually and by easy ascents. But further south, along the eastern side of the sea, all becomes more wild and precipitous. The line of mountains on the east of this sea, is apparently higher than those on the west; the latter having, about Hebron, an elevation of not less than three thousand feet above the western sea.[3] The high plain, therefore, above described, cannot

[1] Burckhardt, Syria, pp. 348, 353 sq. Lord Lindsay, 1838, p. 283. Irby and Mangles, 1817, p. 98. Dörgens, more nearly, three thousand four hundred and thirty Paris feet; Berl. Zeitschr. f. Erdk., 1850, Dec., p. 417.

[2] Seetzen, I. pp. 407, 410. Burckhardt, pp. 364–366. Irby and Mangles, 1847, pp. 142, 146.

[3] According to Roth, the elevation of Hebron itself is three thousand and twenty-six English feet. Petermann, Georg. Mitth., 1858, p. 3.

well be assumed as of less elevation; that is, three thousand feet above the Mediterranean, or four thousand three hundred feet above the Dead Sea. Along the western verge of this plain, between the Wadys which here cut their way down to the Ghôr, rise a series of heights and ridges, forming a lofty crest, overlooking the deep caldron below. The highest of these is Jebel 'Attârûs, south of the Zerka-Ma'în. From this high brow, the ridges and precipices of the western slope sink down in wild confusion to the shore of the Dead Sea, some five thousand feet below, where they terminate in a series of perpendicular cliffs rising from twelve hundred to two thousand feet above the water. The steep and narrow chasms of the Zerka-Ma'în and the Môjib or Arnon are seen breaking their way down precipitously to the sea. It is true that in this line of mountains, south of Jebel Jel'âd, as seen from Jericho and the western coast of the Dead Sea, or also from the Mount of Olives, there appears no summit standing out prominently, no peak or point conspicuously higher than the rest; but all is apparently one almost level line of summit, without peaks and without gaps.[1] This is probably the effect of distant view; for we know that such heights do exist, as seen from the east; like Jebel 'Attârûs and others; though their elevation above the high plain on the east is not great.

Within the limits of this southern "half Mount Gilead," were comprised also the particular mountains of *Abarim*, *Pisgah*, *Nebo*, and *Peor*, all mentioned in connection with the death of Moses and the approach of Israel to the Promised Land. At an earlier period, the territory of Moab had extended far north of the Arnon, and included also the south eastern part of the Jordan valley. Of all this northern

[1] Biblical Researches, I. p. 569 [II. p. 306].

territory Moab had been dispossessed by Sihon, king of the Amorites.[1] The Hebrews, approaching by the desert along the eastern border of Edom and Moab proper, overthrew Sihon; and afterwards gave his land to the tribes of Reuben and Gad.[2] But the region continued to be spoken of as the "land of Moab;"[3] and the plains along the lower Jordan, being a part of the great *'Arabah*, were called the *'Arboth Moab*, signifying the "wastes or plains of Moab."[4] Here Israel abode for a long time; for it was during their sojourn in these plains by Jordan, that Balaam uttered his prophecies; and here also took place the whoredoms with the daughters of Moab (Midianites), and the war against Midian; as likewise all the events recorded in Deuteronomy, including the thirty days of mourning for Moses.[5] From these plains of Moab, the Hebrews, under Joshua, immediately crossed the Jordan.[6]

Of the particular mountains above mentioned, *Mount Abarim*, or the *mountains of Abarim*,[7] is but another name for that portion of Mount Gilead lying over against Jericho and further south. The name *Abarim* signifies 'regions beyond;' and on the lips of tribes dwelling west of Jordan, would be an apt appellation for the "mountains beyond Jordan." It was on these mountains, near Nebo, that Israel encamped, as the last station before descending to the plains of Moab by Jordan;[8] and it was into the same mountains of Abarim,

[1] Num. xxi. 26.

[2] Num. xxi. 11-13; Judg. xi. 18; Num. xxi. 23-26, xxxii. 33.

[3] Deut. i. 5, xxxii. 49, xxxiv. 5, 6, 8.

[4] Num. xxii. 1, xxvi. 3, xxxi. 12, xxxiii. 48-50, xxxv. 1; Deut. xxxiv. 1.

[5] Num. xxii.-xxiv., xxv., xxxi.; Deut. xxxiv. 8.

[6] Josh. i. 11, iii. 1, 2.

[7] Num. xxvii. 12; Deut. xxxii. 49; Num. xxxiii. 47, 48.

[8] Num. xxxiii. 47, 48.

that Moses went up from the same plains, to obtain a view of the Promised Land, and die.[1] The name Abarim was apparently sometimes so extended as to include all the mountainous tract east of the Dead Sea. A station of the Hebrews, *Ije-Abarim*, is marked as in or near the desert east of Moab proper; and this 'Iim of Abarim' would seem to be so called to distinguish it from the Iim in the southeast of Judah.[2]

*Pisgah* is nowhere said to be a mountain; yet the phrase "head [top] of Pisgah,"[3] as well as other notices, imply that it was a ridge or range of mountains, over against Jericho; and therefore so far identical with Mount Abarim. Thus Israel, after leaving the eastern desert, is said (in the Hebrew) to have gone "from Bamoth to the plain (הַשָּׂדֶה) which is in the country (field) of Moab, to the top of Pisgah, which overlooketh (וְנִשְׁקְפָה) the wilderness."[4] Here the plain is some part of the high table-land along the summit of the mountains, and the wilderness is the desert plain of the 'Arabah below, where Israel afterwards so long encamped.[5] In like manner, the mountains which Moses was to ascend from the camp near Jordan, in order to obtain a view and die, are twice spoken of as Pisgah, and twice as Abarim.[6] According to Eusebius, the region between Livias near Jordan, and Heshbon, still bore in his day the name *Phusgo* (Pisgah).[7] In Scripture the name would seem to be applied especially

[1] Num. xxvii. 12, 13; Deut. xxxii. 49; comp. Deut. iii. 27, xxxiv. 1 sq. Onomast., Article *Abarim*.

[2] Num. xxi. 11, xxxiii. 44, 45; Josh. xv. 29.

[3] Num. xxi. 20; Deut xxxiv. 1.

[4] Num. xxi. 20; comp. Num. xxxiii. 47, 48.

[5] Num. xxiv. 1, 2; Deut. i. 1.

[6] Deut. iii. 27, xxxii. 49, xxxiv. 1; Num. xxvii. 12, 13.

[7] Onomast., Article *Abarim*.

to the upper part of these mountains, to the serrated crests or line of heights forming the brow of the mountains on the west of the high plain.

The mountain which Moses ascended, to view the land and die, *Mount Nebo*, is only twice certainly spoken of in Scripture, — once as a summit in the Abarim, and once as the top or "head" of Pisgah, over against Jericho.[1] In one place it is uncertain whether the name Nebo is to be understood of a mountain or a town.[2] In all the other passages relating to this region Nebo is undoubtedly a town or city; taking its name from the mountain, or giving name to the latter, and of course situated near it. Thus Nebo is enumerated with other cities, mostly in connection with Heshbon and Elealc, and especially with Baal-Meon, now Mâ'în, an hour south of Heshbon.[3] It follows, that both the mountain and town of Nebo were on the western verge of the high plain, not far distant from Heshbon and Maon. With this accords also the account of Eusebius and Jerome; that in their day Mount Nebo was pointed out six miles west of Heshbon; and also the deserted city Nebo eight miles south of Heshbon.[4] The obvious interpretation here is, that both mountain and town lay in a *southwest* direction from Heshbon; and if the relative distances are correctly given, then apparently the town must have been situated either further south than the mount, or else below the high brow of Pisgah, near the base of the height or cliff Nebo. At the present day there is enumerated among the sites of ruins in the

[1] Deut. xxxii. 49, xxxiv. 1. [2] Num. xxxiii. 47.

[3] Num. xxxii. 3, 38; 1 Chron. v. 8; and so Isa. xv. 2; Jer. xlviii. 1, 22. There was also a town Nebo in Judah, Ezra ii. 29, x. 43; Neh. vii. 33. The idol Nebo is mentioned Isa. xlvi. 1.

[4] Onomast., Articles *Naban, Nabo.* In the former article the 'contra orientalem plagam' of Jerome, is obviously an error for occidentalem.

Belka, a place called *Nebâ*,[1] in near connection with Eleale, Heshbon, and Mâ'în.[2] This is, without much doubt, the site of the ancient Nebo; and we may hope that the researches of future travellers will bring it to light, and thus determine also the true position of Mount Nebo.[3]

The height named *Peor*, also, is nowhere in Scripture directly termed a mountain; yet the "head" or top of Peor is once spoken of.[4] On it a Baal was worshipped, Baal-Peor, or also simply Peor;[5] and a temple or tower, Beth-Peor, lay on or near it.[6] From the few notices in Scripture and elsewhere, it would appear, that this height, Peor, lay further north than Nebo, and nearer to the encampment of the Hebrews along the Jordan, so as to command a view of the whole host. It would seem to have been a projecting eminence, on the western declivity of the mountain, and "overlooked (הַנִּשְׁקָף) the wilderness;" that is, the 'Arabah, where Israel was encamped "over against Beth-Peor."[7] This is shown, also, by the movements of Balak and Balaam, in order to obtain a full view of the host. From a city on the

[1] Hebrew, Nebo; Septuagint, Ναβαῦ; Deut. xxxii. 49, xxxiv. 1.

[2] E. Smith's Arabic Lists, Biblical Researches, 1841, App., p. 170.

[3] In 1818, Irby and Mangles went from their camp near Mâ'în to a height not far distant, which commands a fine view of the Dead Sea, and is nearly on a line with its northern end. Below the height was a ruin of a square form. This point, if the distances of the Onomasticon are correct, would seem to be hardly far enough south for Nebo. Irby and Mangles, 1847, p. 143.

[4] Num. xxiii. 28.

[5] Num. xxv. 3, xxiii. 28, xxxi. 16; Josh. xxii. 17.

[6] Deut. iii. 29, iv. 46, xxxiv. 6; Josh. xiii. 20.

[7] Num. xxiii. 28; comp. xxiv. 2; Deut. iii. 29, iv. 46, xxxiv. 6. In these three passages the Hebrew word גֵּיא is used; and is by some supposed to refer to the high plain upon the mountain. But the transactions narrated just before, in each case, all took place after the encampment by Jordan. So Deut. iii. 29; comp. Num. xxvii. 12, xxvi. 3. Also Deut. iv. 46; comp. v. 43; Num. xxxv. 1, 6, 14.

Arnon, where they met, they first moved to Kirjath-huzzoth, of which we know nothing; and thence to "the high places (בָּמוֹת) of Baal," where they could only see "the utmost part of the people."[1] They next go to "the watcher's field, to the top of Pisgah;" which may or may not have been the same with Mount Nebo, though more probably further north; and here again they could still see only "the utmost part" of the people, and not all of them.[2] At last they repair to "the top of Peor, that looketh toward the wilderness;" and there Balaam "saw Israel abiding according to their tribes;"[3] implying a nearer and unobstructed view. Still more definite are the statements of Eusebius and Jerome. In their day a Mount Phogor (Peor, Septuagint Φογώρ) was pointed out over against Jericho, on the ascent between Livias and Heshbon; the city Beth-Phogor was six miles from Livias; another city, Danneba, lay on Mount Phogor, seven miles from Heshbon; while Heshbon itself was twenty miles distant from the Jordan.[4] Hence it would follow, that the height known as Peor lay between Danneba and Beth-Peor, about midway between Livias and Heshbon.

Of all the heights and ridges which constitute the lofty brow of the Abarim, or eastern mountains, the highest in the southern quarter is Jebel 'Attârûs, already mentioned. Its northern end rises precipitously from the south side of the Zerka-Ma'în, and its ridge extends southwest for six or eight miles.[5] Upon this ridge, about midway of its length, are the ruins of an ancient town, Attârûs, from which the mountain takes its name. This marks the site of the ancient

[1] Num. xxii. 36, 39, 41. [2] Num. xxiii. 13, 14.

[3] Num. xxiii. 28; comp. xxiv. 2.

[4] Onomast., Articles *Abarim, Beth-Fogor, Damnaba, Esebon, Fogor.*

[5] Seetzen, Reisen, II. p. 342. Burckhardt, Syria, p. 370.

*Ataroth* of Gad, which is named in connection with Dibon.[1] On the southwestern end of the ridge are the ruins now called Kureiyât, marking the ancient *Kirjathaim* rebuilt by Reuben.[2] At the northern extremity, on a precipice overhanging the Zerka-Ma'în, are the ruins of an ancient castle, now known as Mkauer, the fortress Machærus of Herod; where, according to Josephus, John the Baptist was beheaded.[3] Hence, though this mountain is not expressly mentioned in Scripture, it is yet connected with several scriptural associations.

Josephus, in describing the line of mountains on the east of the Jordan, stretching from the lake of Tiberias to Arabia Petraea, speaks of one called the *Iron Mountain*, extending quite to Moab.[4] The name would seem to be thus applied to the mountain along the northern part of the Dead Sea, as far as to the Arnon. The lower portion of that mountain is comprised in great part of sandstone containing iron, which gives it a reddish hue; and in some places large masses are seen of a dark brown or black color.[5] Hence perhaps the ancient name, Iron Mountains.

South of the Arnon, the land of Moab proper extended to the Wady el-Ahsy, the brook Zered of Scripture.[6] The general character of the region remains the same as on the north of the Arnon; a wall of wild, desolate, precipitous moun-

[1] Num. xxxii. 3, 34. Seetzen, Reisen, II. p. 342.

[2] Num. xxxii. 37; Josh. xiii. 19; Jer. xlviii. 1, 23. Seetzen, Reisen, II. p. 342. Burckhardt, Syria, p. 370.

[3] Seetzen, Reisen, II. pp. 331, 334. Joseph. Bel. Jud., 7. 6. 1–4. Antiq., 18. 5. 2.

[4] Joseph. Bel. Jud., 4. 8. 2, τὸ Σιδηροῦν καλούμενον ὄρος.

[5] Seetzen, Reisen, II. pp. 363, 370, 372, 374. Eisenschüssiger Sandstein, Eisensandstein, Ibid., pp. 363, 374. Burckhardt supposes the name may have come from the black, heavy stone found in the region, resembling basalt, Syria, p. 375.

[6] Num. xxi. 12; Deut. ii. 13, 14; comp. 18.

tains, rising from the very water of the Dead Sea; with a high plain along the top, back of the lofty brow, less grassy and more stony than that further north,[1] and passing over into the eastern desert. The steeps along the sea, south of the Môjib, are described by Seetzen as peculiarly wild and bare of vegetation, with gigantic terraces of naked sandstone or limestone.[2] Above, along the brow, only one particular height is mentioned, seen by Burckhardt from the east, as Jebel Shîhân, not far from the Arnon; not improbably the same which Seetzen saw from the west, and heard named only er-Râs.[2]

Further south, and on the brow of the mountain, stands Kerak, the ancient Kir Moab, upon a cliff overhanging a deep valley. It is distinctly visible, in a clear day, from the Mount of Olives; and its Wady also can be traced, as it runs down W. S. W. and issues upon the peninsula of the Dead Sea. The elevation of Kerak, according to Roth, is about three thousand three hundred feet above the Mediterranean, but it is apparently lower than the high plain further north.[4]

There remain two words, as to which it is uncertain, whether they are proper names of mountains, or not. These are *Bether* and *Bithron*.[5] They both come from the same Hebrew verb, and signify *a cleaving*, *cleft*, *fissure*. As to the latter word, it is said of Abner, that he "passed over Jordan, and went through all Bithron, and came to Mahanaim." Here Bithron may well be put for a "mountain-cleft" or

[1] Seetzen, Reisen, I. p. 410. Irby and Mangles, pp. 141, 142.

[2] Reisen, II. pp. 354, 363, 367.

[3] Burckhardt, Syria, p. 375. Seetzen, II. p. 349. See also De Saulcy, I. p. 354.

[4] Geogr. Mitth., 1859, p. 291. Irby and Mangles, p. 141.

[5] '*Mountains of Bether*,' Cant. ii. 17; '*Bithron*,' 2 Sam. ii. 29.

ravine; implying that he followed up either Wady 'Ajlûn or Wady Mahneh; either of which would have brought him to Mahanaim, which lay high up on the acclivity. In like manner, *Bether* may best be taken as an appellation, applied to mountains "cleft with valleys," rugged, precipitous.[1] If, however, it be a proper name, the position of the mountains of *Bether* is utterly unknown.

[1] Septuagint, ὄρη κοιλωμάτιον, Cant. ii. 17.

## SECTION II.

### VALLEYS.

Not less than four different Hebrew words are rendered, in the English Version, by the term *valley*, with more or less exactness. A few remarks upon the proper signification of each of these Hebrew words, may here not be without use.

The first is *Bik'ah* (בִּקְעָה), strictly "a cleft" in mountains, a valley; and is so used in contrast to mountains.[1] But in common usage it is "a deep and wide plain between ranges of mountains." Such is "the plain of Aven" or On,[2] the Syrian Heliopolis, now Ba'albek; which plain or valley, stretching between Lebanon and Anti-Lebanon, still retains in Arabic its ancient appellation, el-Bŭkâ'a, "a cleft." The same word is put for the broad valley or plain of the Jordan, both at its northern end and at Jericho.[3] Similar in signification are the Greek *Aulon* (*Αὐλών*) and the Arabic *Ghôr*, both used later as appellations to denote the same valley of the Jordan.

Another Hebrew word is *'Emek* (עֵמֶק), which signifies a valley or low plain, similar to the *Bik'ah*, but generally on a much smaller scale. It is strictly an open valley, "a long low plain" between ranges of hills or mountains, with a broad and level bottom, adapted for tillage, or also con-

[1] Deut. viii. 7, xi. 11; Ps. civ. 8.
[2] Amos i. 5.
[3] Josh xi. 17, xii. 7; Deut. xxxiv. 3.

venient for battles.[1] Such are the valleys of Jezreel, of Rephaim, and of Elah, now Wady es-Sŭmt. Yet, as we shall see further on, it is in a few instances spoken of the great valley of the Jordan, which is strictly a *Bik'ah*.

A third Hebrew word is *Nahal* (נַחַל) the primary idea of which is "a flowing," and then "place of flowing." Hence it is put in a general sense for a flowing stream, a brook or river.[2] So the Kishon always.[3] But usually, with a proper name, the *Nahal* is rather "a place of flowing," a valley with a stream; that is, a narrow valley or chasm, often deep, the bottom of which is occupied, in great part, by a water-course. The stream may be permanent or transient. The *Nahal* therefore differs altogether from both the *Bik'ah* and the *Emek*. Such are the deep chasms of the Jabbok and the Arnon, with perennial streams. Such is the ravine of the Kidron (called by Josephus *Φάραγξ*), which has no stream except after heavy rain; and such also was the *Cherith*, where Elijah was fed by ravens until the brook dried up.[4] In like manner a water-course in the desert is called a *Nahal;* being usually a gully or chasm worn by the torrents of the rainy season; or lying sometimes between low hills. Such is the Valley of Gerar, and also that of Egypt, now Wady el-'Arish.[5] The English Version often puts "brook," where the reference is rather to the valley.

The fourth Hebrew word, *Gai* (גַּיְא, גֵּי), is perhaps less definite than either of the others. It seems to imply originally,

[1] Job xxxix. 10; Ps. lxv. 13; Cant. ii. 1; Job xxxix. 21; Judg. vii. 1 sq.; 1 Kings xx. 28, etc.

[2] Deut. viii. 7; 2 Chron. xxxii. 4; Ps. lxxviii. 20; Isa. xi. 15, xxx. 28; Jer. xlvii. 2.

[3] Judg. v. 21; comp. iv. 7, 13; 1 Kings xviii. 40; Ps. lxxxiii. 9.

[4] 1 Kings xvii. 3, 5, 7.

[5] Gen. xxvi. 17; Num. xxxiv. 5; Josh. xv. 4, 47.

a depressed tract, or basin, where waters flow together and run off through a valley; both basin and valley being comprehended under the name *Gai*. This is precisely the character of the Valley of Hinnom by Jerusalem; as also of the Valley of Jiphthah-el, now Wady 'Abilîn. The word then further signifies 'a low plain,' level tract, with adjacent hills or mountains; as the Valley of Salt southeast of Aleppo.[1] Yet the word is sometimes employed for "valley" or "plain" in general; and is so used in antithesis with hills and mountains.[2] The Seventy also render it sometimes by φάραγξ, even as spoken of the Valley of Hinnom.[3]

Most of the valleys of Palestine have in them no permanent streams of water; but exhibit merely the beds of torrents, which flow only in the rainy season of winter; and, after the rains cease, soon dry up. In treating here of valleys, we include only those of this kind; leaving those with perennial waters to be described in a future Section on the rivers and streams of the country. The only exception is the great valley of the Jordan; which has a character of its own, quite apart from the river which flows through it.

### I. VALLEY OF THE JORDAN, OR EL-GHÔR.

*Extent and Connections.* — This valley is that portion of the great inland longitudinal valley or chasm, stretching from Antioch to the Red Sea, which lies in Palestine proper, and is occupied by the river Jordan and its three lakes. It extends from the southern base of Jebel esh-Sheikh (Hermon) to the Scorpion Cliffs (Akrabbim), some eight miles south of

[1] 2 Sam. viii. 13; Ps. lx. 2. See Russell's Nat. Hist. of Aleppo, I. p. 55. Maundrell, p. 213.

[2] 2 Kings ii. 16; Ezek. vi. 3, xxxv. 8.

[3] Isa. xl. 4, xxii. 1. Hinnom, Josh. xv. 8.

the Dead Sea. Its general course is very nearly from due north to south. Its length, therefore, is the same with that of the country itself, — about one hundred and thirty-six geographical miles, or one hundred and fifty-eight English miles.

Towards the south this valley is continued by the desert Wady el-'Arabah, which extends from it, without water, to the Elanitû Gulf. On the north the Jordan valley is connected with the Bŭkâ'a, the broad cleft and plain between Lebanon and Anti-Lebanon; through which flows the river Lîtâny. This connection is made by the narrower Wady et-Teim, which enters the Jordan valley at its northwest corner. It lies along the western base of Hermon and Anti-Lebanon; being separated from the Lîtâny valley by a narrow ridge in the south and a range of hills in the north, until the two meet and run together opposite the great fountain of 'Anjar in the Bŭkâ'a.

*Name.* — The ancient Hebrew proper name of this valley is altogether lost in the English Version; being there rendered, like several other Hebrew words, by the very general term 'plain.' But the Hebrew '*Arabah* (עֲרָבָה), signifying in general 'a desert plain, waste, Steppe,'[1] is in Scripture applied with the article (*the* 'Arabah) directly as the proper name of this great valley.[2] This name strictly extends from the lake of Tiberias southwards, quite to the Red Sea. We find the Hebrew 'Arabah distinctly connected with the lake of Tiberias in the north;[3] and with the Red Sea and Elath in the south;[4] while the Dead Sea is called the sea of the

[1] Job. xxiv. 5, xxxix. 6; Isa. xxxv. 1, 6, xl. 3, etc.

[2] Josh. xi. 16; 2 Sam. ii. 29, iv. 17; 2 Kings xxv. 4; Jer. xxxix. 4, lii. 7; Ezek. xlvii. 8, etc.

[3] Heb., Josh. xi. 2, xii. 3; Deut. iii. 17. [4] Deut. i. 1, ii. 8.

'Arabah.[1] At the present day that portion of the great valley, lying between Palestine proper and the Red Sea, retains its ancient Hebrew name, Wady el-'Arabah.

The plural of the same Hebrew word (*'Araboth*, constr. *'Arboth*), apparently in its primary sense, is employed, when certain 'waste tracts' in the great 'Arabah are spoken of. Thus we read of 'the wastes (*'Arboth*) of Jericho,' west of the Jordan;[2] 'the wastes (plains?) of Moab,' east of the Jordan, over against Jericho;[3] and 'the wastes of the wilderness,' or uninhabited district, apparently north of Jericho.[4]

In a similar way Greeks and Romans spoke of this valley as *the Aulon* (ὁ *Αὐλών*).[5] Eusebius and Jerome describe it as a long valley or low plain, shut in on both sides by mountains, and extending from Lebanon and above quite to the desert of Paran.[6] Josephus speaks of it also as the Great Plain, extending from the lake of Tiberias to the Dead Sea.[7] The present Arabic name, *el-Ghôr*, has a like signification, — 'a long valley, or low plain, between mountains;' and Abulfeda in the fourteenth century describes it as beginning at the lake of Tiberias and extending to the Red Sea.[8] But more usually the Ghôr is understood as stretching between the lake of Tiberias and the Scorpion Cliffs south of the Dead Sea; and is put in a general sense for the valley of the Jordan.[9] We shall often so use it for convenience.

[1] Josh. iii. 16, xii. 3; Deut. iv. 49. [2] Josh. v. 10; 2 Kings xxv. 5.

[3] Num. xxii. 1; Deut xxxiv. 1, 8. See above, p. 62.

[4] 2 Sam. xv. 28, xvii. 16.

[5] Joseph. Bel. Jud., 1. 21. 9. Antiq., 16. 5. 2. Comp. Antiq., 13. 15. 4.

[6] Onomast., Article *Aulon*.

[7] Joseph. Bel. Jud., 4. 8. 2, 3. Antiq., 12. 8. 5.

[8] Abulfeda, Tab. Syr. (ed. Köhler), pp. 8, 9, and note 35.

[9] Edrisi, par Jaubert, p. 346. Vita Salad., pp. 221, 222, etc. See Biblical Researches, II. p. 186 [II. p. 599].

*General Features.* — The northern portion of the great valley may properly be called the Basin or Plain of the Hûleh. Its northern end is shut in, on the eastern part, as with a wall, by the great southwestern buttress of Jebel esh-Sheikh. Further west the plain of Wady et-Teim comes in from the north. The whole width of the basin, between Bâniâs and the western mountain, is about five miles. Its length, to the southern extremity of the lake, is some sixteen miles. The western wall of the basin rises steeply to the plain of Kedes, from seven hundred to one thousand feet;[1] and continues to rise further west to the elevation of Safed. On the east of the basin the ascent is much less steep, but rises higher; the lake Phiala lying about two thousand six hundred feet above the valley.[2]

The plain of Wady et-Teim has a very rapid descent, and enters the basin of the Hûleh by three steps or offsets running from northeast to southwest, with wide terraces between. Tell el-Kâdy stands on the brow of another similar step; and there are still two others further south. The line of these last three offsets runs more from east to west. The difference of elevation between one plateau and another is nowhere less than some fifty feet, and sometimes more. The whole descent from the northern line of the basin to the waters of the Hûleh, in its southern part, a distance of about ten miles, is hardly less than six hundred feet. At the northeast corner of the basin, is the fine terrace on which Bâniâs is situated.

A prominent feature of this basin is its exuberant fertility.

[1] Kedes has an elevation of thirteen hundred and fifty-four feet, while that of Tell el-Kâdy is six hundred and forty-seven feet.

[2] The elevation of Phiala above the sea is given by Roth at three thousand one hundred Paris feet; Petermann's Geogr. Mitth., 1859, p. 290.

The lake lies close to the eastern mountain. On the west the land is rolling and arable. North of the lake is an extensive marsh, covered with canes and flags, into which nothing can penetrate. This marsh extends westward, and northwestward in some places, along the streams which enter it from that quarter. Canals are also taken out from the branches of the Jordan, for the purposes of irrigation; and these give rise in some places to spots of mire and marsh. But in passing, in May, 1852, along the lower plain quite to the junction of all the streams with the Jordan, a distance of five or six miles south of Tell el-Kâdy, we found no trace of marshy ground, although we forded several of the streams. The region still merits the praise given to it by the Danite spies: "We have seen the land, and behold, it is very good, . . . . . a place where there is no want of any thing that is in the earth."[1]

In Scripture the name of this region is *Merom;* and the lake is called the *Waters of Merom.*[2] But the present name, el-Hûleh, was current in Aramaean in the time of our Lord, and has been preserved to us by Josephus in the Greek from *Ulatha* (*Οὐλάθα*). Augustus gave to Herod the districts which had belonged to Zenodorus, "lying between Trachonitis and Galilee; namely, *Ulatha* and Paneas, and the region round about."[3]

On the south the basin of the Hûleh is closed by a broad tract of uneven and mostly uncultivated higher ground, which shelves down from the base of the loftier hills around Safed, and shuts up the whole valley; leaving only a depression south of the lake, along which the Jordan rushes, in its

[1] Judg. xviii. 9, 10. [2] Josh. xi. 5, 7.

[3] Joseph. Antiq., 15. 10. 3; comp. Bel. Jud., 1. 20. 4. Comp. also Heb. חוּל, Sept. Οὖλ, Gen. x. 23.

deep and rocky volcanic chasm, to the lake of Tiberias; a distance, in all, of ten or twelve miles. The descent from the upper to the lower lake, taking a mean of the various levels of the latter, is not less than seven hundred and fifty feet; which compares well with the slope of the upper basin. On the east the high tract terminates at the basin of the lower lake, where the hills retreat, leaving between them and the lake the fine alluvial plain known as the Batîhah, equalling in its richness and fertility that of the Hûleh.[1]

On the west, the high tract above described continues for about twelve miles in breadth, quite to the plain of Gennesareth, midway of the lake. It slopes down very gradually to the shore of the lake along its northern part, and terminates at the rocky promontory which juts down to the water, and forms the northern limit of the plain.

The plain of Gennesareth, now called el-Ghuweir, 'Little Ghôr,' is described by Josephus, in glowing terms, for its fertility and productiveness.[2] It lies along the lake for about three miles in length; and extends back in the arc of a circle for a mile or more, where it is shut in by hills. The southern half is watered by several streams; the northern portion, now without water, was anciently irrigated by a stream brought from 'Ain Tâbighah, around the point of the promontory.[3]

South of the plain of Gennesareth, the western hills return again to the shore of the lake, and so continue along the Ghôr to the junction of the plain of Jezreel. These hills, however, are for the most part nothing more than the step, or offset, from the table-land above, around Tabor, down to the level of the lake and valley. Assuming that this table-

[1] Biblical Researches, II. pp. 410–414 [III. pp. 304–310].

[2] Joseph. Bel. Jud., 3. 10. 8. [3] Later Biblical Researches, pp. 344, 348.

land is not lower than the level of the Mediterranean, the whole descent to the valley is not less than some seven hundred feet. On the east of the lake, also, the wall rises steeply from the water, perhaps one thousand feet to the table-land of Gaulonitis; and continues to rise gradually, further back, to the higher plains of Haurân.

Two or three hours below the lake, and south of the river Hieromax, the mountains of 'Ajlûn rise up and become thenceforth the eastern barrier of the Ghôr; interrupted only by the valley of the Jabbok. As the mountains of 'Ajlûn, of Gilead and the Belka, or of old the *Abarim*, this range extends on beyond the Dead Sea.

The valley or plain of Jezreel, having reached the line of the Ghôr at Beisân, sinks down to the lower valley, three or four hundred feet, by a step or offset of easy descent. A portion of the same higher plain stretches off south along the base of the southeastern sweep of the mountains of Gilboa, which here lie somewhat back from the usual line of the Ghôr; and then descends by steps to the lower valley.

South of these mountains of Gilboa, the western hills are lower, and broken up by valleys, for much of the way towards el-Makhrûd, the bluff on the north side of Wady Fâri'a. Below Sâkût, spurs and ridges from these western hills run down to the Jordan, where they terminate in bluffs; the river in this part being driven quite to the eastern side of the Ghôr.[1] From the lake of Tiberias to Sâkût, the long low plain of the Ghôr, besides the Jordan meandering through it, is full of fountains and rivulets; and bears, in a high degree, the character of a well watered and most fertile region. Josephus speaks of it here as the Great Plain.[2]

[1] Later Biblical Researches, p. 209.

[2] Joseph. Antiq., 12. 8. 5, μέγα πεδίον.

Below Sâkût the valley continues more or less contracted quite down to el-Makhrûd ; which promontory, for some distance, lies between the lower part of Wady el-Fâri'a and the Ghôr. Then follows the rich meadow-like plain of the Fâri'a, merging itself in that of the Ghôr, and extending, as a luxuriant and beautiful tract, under the name of el-Kŭrâwa, quite to the Jordan. On the southwest it skirts the base of Kŭrn Sŭrtabeh.

This imposing mountain, stretching towards the southeast far into the Ghôr, contracts it to its narrowest limits ; and, as we have seen, divides it into the upper and lower Ghôr.[1] Indeed, a low ridge or swell of land seems to extend across the whole valley, from the end of Sŭrtabeh to the base of the eastern mountains. Where the Jordan finds its way through this higher tract, the latter is broken up into labyrinths of deep ravines with barren, chalky sides, forming pyramids and hills of various shapes, and presenting a most wild and desolate scene.[2]

South of Kŭrn Sŭrtabeh the character of the plain of the Ghôr changes, and becomes a parched desert; except the strip of verdure along the immediate banks of the Jordan, and the tracts watered by the copious fountains which spring up at the base of the mountains on each side. The eastern mountains continue as before. The western wall is a series of irregular and precipitous cliffs ranging from eight hundred to twelve hundred feet in height, everywhere naked and desolate. The mountains on both sides, as they enclose the Dead Sea, become still loftier, and present, in a still higher degree, a scene of stern and savage grandeur. The

[1] See above, pp. 48, 49.

[2] Later Biblical Researches, p. 293. Van de Velde Mem. p. 125.

brow of the western cliffs is here about on a level with the Mediterranean.

North of Jericho, the mountains begin to retire gradually, especially the western; so that at Jericho the breadth of the valley is enlarged to ten or twelve miles; and this continues along the Dead Sea, with few exceptions. Along the north-eastern side of Quarantana is a higher terrace, resting against the western wall, and bordered in front by a low ridge of rock, extending towards 'Aujeh. On this terrace are the fountains of Dûk. Indeed, so rapid is here the slope of the great valley from the west to the Jordan, as well as towards the south, that the village of Jericho is said to have an elevation of four hundred and seventeen feet above the Dead Sea.[1]

The length of the Ghôr between the lake of Tiberias and the Dead Sea, is fifty-six and one sixth geographical miles, or about sixty-five English miles. The difference of level between the two lakes, according to the United States Expedition, is 663.4 feet. This shows a descent of 10.2 feet in every English mile.

*Valleys or Plains within the Ghôr.* — Besides the general Hebrew name for the great valley, *the 'Arabah*, we find in Scripture other names applied to different portions of it.

One of these is the term *Kikkar* (כִּכָּר, Gr. *περίχωρος*), signifying 'a circle, circuit.' Hence, 'the circuit' of the Jordan,[2] is the region round about Jordan, the low tract or plain *along* that river, through which it flows. In this way, it would seem to be as comprehensive, perhaps, as the Ghôr itself. It is spoken of the region chosen by Lot, near Zoar, south of the Dead Sea; of the plain around Jericho and

[1] Symonds fixes Jericho at —900; the Dead Sea is —1317.

[2] Gen. xiii. 10, 11; 1 Kings vii. 46; Matth. iii. 5; Luke iii. 3.

further north; and of the upper Ghôr, near Beisân.[1] It is rendered in the English Version by 'plain.'

Of the four species of valley described in the beginning of this Section, the *Bik'ah*, the *'Emek*, and the *Gai* (but not the *Nahal*) are applied in Scripture to portions of the Ghôr.

The great valley itself is strictly a *Bik'ah*, 'cleft;' but is nowhere so spoken of as a whole. The term is only applied to two different portions of it. The *Bik'ah* (valley) *of Lebanon under Hermon*, is unquestionably the plain or basin of the Hûleh, while the *Bik'ah* (valley) *of Jericho* is the great valley itself around that city.[2]

The Ghôr is likewise spoken of several times in Scripture as an *'Emek*. The chief and decisive passage is in the book of Joshua; where the writer, after enumerating the cities of Gad in Mount Gilead, goes on to say, "and in the valley (בָּעֵמֶק) Beth-aram, and Beth-nimrah, and Succoth, . . . . Jordan and border unto the edge of the sea of Chinneroth."[3] All these lay in the Ghôr. Once the term is applied to the basin of the Hûleh, in which the Danites built their city Dan, in the district of Beth-Rehob.[4] Twice the "valley of Succoth" is mentioned;[5] and, if the present Sâkût represents the ancient city, the valley as there contracted is properly an *'Emek*. In like manner, the "vale of Siddim," which was full of slime-pits, and "which is [now] the Salt Sea,"[6] could only have been the fertile plain chosen by Lot, south of the Dead Sea, now occupied by the shallow southern portion of that sea.

[1] South of the Dead Sea, Gen xiii. 10, 11, 12, xix. 17, 25, 28, 29. To the plain around Jericho, etc., Deut. xxxiv. 3; 2 Sam. xviii. 23; Neh. iii. 22; Matth. iii. 5; Luke iii. 3. To the upper Ghôr, 1 Kings vii. 46; 2 Chron. iv. 17.

[2] Josh. xi. 17, xii. 7; Deut. xxxiv. 3.

[3] Josh. xiii. 27.

[4] Judg. xviii. 28.

[5] Ps. lx. 6, cviii. 7.

[6] Gen. xiv. 3, 8, 10.

Two other valleys of the kind (עֵמֶק) are mentioned near Jericho, apparently within the Ghôr itself. One is the valley of *Achor* or 'the Troubler;' in which was accomplished the terrible doom of Achan and his family, as having troubled Israel.[1] This valley lay on the border between Judah and Benjamin, which, after passing westwards from Beth-hogla, a known point, by Beth-arabah, to the stone of Bohan the son of Reuben, apparently at or near the foot of the mountain, "went up toward Debir, from the valley of Achor."[2] Hence, this valley is to be sought in the southwest of Jericho; for Jericho was in Benjamin; and the same border went up the mountain on the south of the *Nahal*, now Wady el-Kelt. Jerome wrongly places the valley of Achor on the north of Jericho.[3]

The second valley was the site of a town called *'Emek-Keziz* (Sept. *'Αμεκασίς*), English Version, 'valley of Keziz.'[4] It belonged to Benjamin; and is mentioned between Beth-hogla and Beth-arabah, which were on the southern border of that tribe. It lay, therefore, apparently not far from the same border, southeastward from Jericho, in a lower tract or depression of the plain.

In a similar manner, the remaining species of valley, the *Gai* (גַּיְא) is twice used of portions of the Ghôr. Thus, 'the valley over against Beth-peor,' where Israel was encamped, and where Moses set the law and the testimonies before the people, is obviously a portion of the same tract elsewhere called 'the plains of Moab.'[5] It lay apparently between the Wadys Sha'ib and Hesbân. Again, the valley of Salt, where

[1] Josh vii. 24, 26. Symbolically, Isa. lxv. 10; Hos. ii. 15.

[2] Josh. xv. 6, 7.

[3] Onomast., Article *Achor*.

[4] Josh. xviii. 21.

[5] Deut. iv. 46, iii. 29; comp. Num. xxii. 1, xxxiii. 48, 49; Deut. i. 1.

Amaziah smote Edom, could only have been at the south end of the Dead Sea; probably in the western part of the Ghôr, at and around the mountain of fossil Salt.[1]

Another place or tract is mentioned in Scripture, in connection with the sojourn of Israel in the 'plains of Moab.' It is once called *Abel-Shittim*, 'meadow of Shittim;' elsewhere usually only *Shittim;* where Israel committed whoredom with the daughters of Moab; whence they sent spies to Jericho; and whence they broke up in order to pass the Jordan.[2] Josephus calls the place *Abila*, and says it was situated sixty stadia from the Jordan.[3] Eusebius and Jerome describe Shittim as being adjacent to Mount Peor.[4] It is therefore not improbable, that this meadow-like tract of Shittim was in part, at least, identical with the above 'valley (גַּיְא) over against Beth-Peor.' Once a 'valley (נַחַל) of Shittim' is spoken of; which, if anything more than symbolical, would seem to be the ravine on the side of the mountain, forming the head of the meadow-like tract in the plain below.[5]

## II. THE GHÔR: SIDE VALLEYS FROM THE EAST.

The neighborhood of Bâniâs, in the northeast corner of the basin of the Hûleh, is marked by the descent of two immense ravines from Hermon, and of another smaller one, with a brook, from Jebel Heish. They are not referred to in Scripture.

[1] 2 Kings xiv. 7; 2 Chron. xxv. 11. Another valley of Salt, mentioned in connection with David (2 Sam. viii. 13; 1 Chron. xviii. 12), is more probably that which still exists a few miles southeast from Aleppo; Russell's Nat. Hist. of Aleppo, I. p. 55.

[2] Num. xxxiii. 49; Num. xxv. 1; Josh. ii. 1, iii. 1; Mich. vi. 5.

[3] Joseph. Antiq., 4. 8. 1; Ibid., 5. 1. 1.

[4] Onomast., Article *Sattim*.

[5] Joel, iii. 18.

The westernmost is Wady el-'Asal, which has its beginning not far south of the village of Shib'a, about four hours N. N. E. of Bâniâs. It forms the mighty cleft between the upper masses and summits of Hermon, and the lower western ridge. It has no village nor hamlet in its entire extent; nor are there in it any fountains. This vast chasm seems to cleave the mountain to its base, and issues from it between two lofty bulwarks, taking its course through the plain along the base of the terrace of Bâniâs.[1]

The second ravine, Wady Khŭshâbeh, begins at the very base of the southwestern peak of Jebel esh-Sheikh, and extends down southwest to the village of Jubbâta. Below this village it turns W. S. W. and cuts off from the very flank of Hermon the thin sharp ridge on which the ancient castle stands. The ravine, a deep and almost impassable gulf, issues upon the terrace of Bâniâs, north of the great fountain. It has no permanent stream.[2]

The smaller valley, Wady Za'ârch, has its beginning in Jebel Heish, at the very base of Hermon, near Mejdel. It runs southwest, with a fine brook, as a pretty, meadow-like valley, called Merj Yafûny, until not far below the lake Phiala it contracts into a wild volcanic glen. Afterwards, sweeping around the end of a ridge, it turns northwest, and descends to Bâniâs. This valley, after reaching the base of the higher hills, has a peculiar feature. It is apparently covered over by a sloping plain, or gentle declivity of arable land, stretching across it, through which, however, it breaks down by a very deep and narrow chasm in the underlying volcanic rock, with jagged perpendicular sides. This chasm extends almost down to Bâniâs, and is so narrow as hardly

[1] Later Biblical Researches, pp. 396, 405.

[2] Later Biblical Researches, pp. 401, 403.

to be noticed, until one comes quite near to it.[1] The brook in the upper valley was flowing with a full stream early in June, and at that time reached Bâniâs. But it can hardly be regarded as perennial throughout.

In connection with the victory of Joshua over Jabin at the waters of Merom, we find in Scripture the name *Mizpeh* spoken both of a land and of a valley (בִּקְעַת).[2] The land of Mizpeh, it is said, was under Hermon; and Joshua chased the flying enemy as far as to Sidon on the west, "and the valley of Mizpeh eastward." Hence it would appear, that the *land* of Mizpeh (signifying 'a lookout, lofty place') lay along the lower southeastern declivity of Hermon, including the higher portion of Jebel Heish; and corresponding nearly to the modern district known as Aklim el-Bellân.[3] These limits comprise the two chief sources of the river A'waj, the ancient Pharpar. The *valley* of Mizpeh, then, would probably be the 'cleft' or valley by which one of those streams, the Jennâny or the 'Arny, issues upon the lower country towards Sa'sa'. In this case, the valley of Mizpeh belongs to the territory of Damascus, as does the Bellân at the present day; and it is treated of here only because Scripture names it in connection with the Hûleh. At a much later period, this land of Mizpeh would seem very probably to have been included in the southwestern part of the *Iturea* of the Greeks and Romans.

Looking across the lake of Tiberias from the west, the high table-land along the eastern shore appears like a wall, rising boldly from the water; and two deep ravines are seen breaking down through it to the lake. That towards the north is Wady Semak, the beginnings of which are in the

[1] Later Biblical Researches, pp. 398, 400, 405.
[2] Josh. xi. 3, 8.
[3] Biblical Researches, 1841, App., pp. 137, 139.

northeast near the end of Jebel Heish. The southern one, nearly opposite Tiberias, is Wady Fîk, having its head near the town of that name.[1] Whether the valley of *the Passengers* on the east of the lake, spoken of by Ezekiel, and also called the valley of *Hamon-Gog* (multitude of Gog),[2] had anything to do with either of these ravines, or was perhaps purely symbolical, is quite uncertain.

About two hours below the lake of Tiberias, comes in the river and valley of the *Hieromax;* draining the whole of the vast plain of Haurân. This will be described under the head of Rivers.[3] One of the branches of this stream, a winter-brook (χειμάῤῥοος), near Raphon, a place not far from the city Karnaim, is mentioned in the Apocrypha. It was there that Timotheus and his pagan host were discomfited by Judas Maccabaeus.[4]

An hour or more south of Pellex, the rather shallow Wady Yâbis comes down from the top of the mountain. It merits notice here, as bearing the name of the ancient *Jabesh-Gilead;* which stood apparently upon its southern side, at a place of ruins now known as ed-Deir.[5]

In like manner, after another hour and a half, the Wady el-Hemâr descends from the mountain. One of its higher branches bears the name of Wady Mahneh, from a place of ruins upon it of the same name, Mahneh. This lies not far north of 'Ajlûn; and the name corresponds to the ancient *Mahanaim.*[6]

Next north of the Jabbok is Wady 'Ajlûn, descending

[1] Seetzen, Reisen, I. p. 343. Burckhardt, Syria, p. 279 sq. Biblical Researches, II. p. 386 [III. p. 262].

[2] Ezek. xxxix. 11, 15.

[3] See Chap. II., Sect. I.

[4] 1 Macc. v. 37, 39, 40, 42.

[5] Later Biblical Researches, pp. 318, 319.

[6] Seetzen, Reisen, I. p. 385. Biblical Researches, 1841, App., p. 166.

steeply to the Ghôr; having its heads above 'Ajlûn. There are fine fountains in it; but their streams, in summer, do not reach the Jordan. This valley may perhaps be the *Bithron*, which Abner ascended to reach Mahanaim.[1]—On its northern side, on one of the high cliffs of the mountain, stands the strong fortress Kŭl'at er-Rŭbŭd, forming a very conspicuous object, and seen from a great distance.[2]

The valley (נַחַל), of the *Jabbok* once called the river of Gad,[3] which breaks through the mountain range, will be described under the Section on Rivers.[4]

Nearly opposite Jericho two Wadys descend to the Jordan from the high plain at the top of the mountain. The northern one is Wady Sha'ib, coming from the vicinity of es-Salt, in a southwest course. In the plains below, it passes by a site of ruins called Nimrîn, the *Nimrah* and *Beth-nimrah* of Scripture. There are also fountains, corresponding to the *waters of Nimrim*.[5] A strip of verdure marks the course of the Wady through the plain to where it meets the Jordan, about E. by N. of Jericho.

The other valley is Wady Hesbân, coming down from the neighborhood of that ancient city to the Jordan, about E. S. E. of Jericho. Its course too in the plain is marked by a line of verdure, which encloses the brook. The latter comes from the tract west of Heshbon; but whether it is perennial, is not known.[6]

We have already treated of one 'valley over against Beth-

[1] 2 Sam. ii. 29. See above, pp. 68, 69.

[2] Biblical Researches, I. p. 445 [II. p. 121].

[3] 2 Sam. xxiv. 5. [4] See Chap. II., Sect. I.

[5] Num. xxxii. 3, 36; Josh. xiii. 27. Onomast., Article *Nemra*. *Nimrim*, Isa. xv. 6; Jer. xlviii. 34. Biblical Researches, I. p. 551 [II. p. 279]. Seetzen, Reisen, II. p. 318.

[6] Biblical Researches, I. p. 551 [II. p. 279]. Seetzen, I. p. 407, II. p. 323.

Peor,' towards the west, in the Ghôr.[1] Another valley, described in the same manner, was the site of the lone and unknown grave of Moses, after his decease on Mount Nebo.[2] Beth-Peor was situated nearly midway of the mountain-slope,[3] and this valley 'over against' it was probably towards the south, having its beginning under or near Nebo, and descending through a wild unvisited region.

On the eastern side of the Dead Sea two considerable streams come down through deep and rugged chasms, the Zerka Ma'în and the Môjib; the former containing the hot baths of *Callirrhoë*, and the latter being the river *Arnon* (נַחַל) of Scripture. From Kerak, the ancient *Kir Moab*, there descends a valley, Wady ed-Dera'ah, with a permanent brook, issuing upon the peninsula. Still further south, and forming the southern boundary of Moab, is the Wady el-Ahsy, with a perennial stream, the ancient *Zered* (נַחַל). All the above valleys are treated of in the Section on Rivers.[4] Other streams appear on the maps, but they all become dry in summer.

One other valley or plain on the east remains to be considered. When Israel, on their approach to Palestine, passed up through the desert on the east of Moab, having crossed the head branches of the Arnon, they turned from the desert to *Mattanah*, *Nahaliel*, and *Bamoth* (heights).[5] Thence their further course was, according to the Hebrew, "from Bamoth to *the valley* or plain (הַשָּׂדֶה) that is in the country of Moab, the top of Pisgah, and it looketh towards the wilderness;" that is, the 'Arabah. Elsewhere it is said, that they encamped at *Dibon* and *Almon-Diblathaim* and in the moun-

[1] See above, p. 83.
[2] Deut. xxxiv. 5, 6; comp. xxxii. 50.
[3] See above, p. 65.
[4] See Chap. II., Sect. I. ii.
[5] Num. xxi. 13, 16, 19.

tains of *Abarim*.[1] This *Gai* therefore would seem to be no other than the high plain along the summit of the eastern mountains, in which Dibon was certainly situated. It might properly be called a *Gai;* since on the west are eminences forming the crest of the Abarim; and at some distance on the east is a chain of hills towards the desert.[2]

### III. THE GHÔR: SIDE VALLEYS FROM THE WEST.

The northernmost valley which enters the basin of the Hûleh from the northwest, is that of the Derdârah, the stream coming from Merj 'Ayûn. This stream, though not strictly perennial, will be described among the branches of the upper Jordan.[3]

Opposite to the lake of the Hûleh, the great Wady Hendâj breaks down through the western mountain by a deep and narrow chasm; the steep banks of which are several hundred feet high. It drains the region around el-Jish (*Giscala*) and further west. In May, 1852, a fine brook was flowing in it; which, however, did not appear to be perennial.[4]

Three valleys issue upon the plain of Gennesareth from the adjacent hills. The northernmost is Wady el-'Amûd, which drains the region around Safed; its bed was dry in May, 1852. The next, which also enters the plain from the west, is the Wady er-Rŭbŭdîyeh, the continuation of Wady Sellâmeh, which comes from the eastern portion of the plain of Ramch.[5] A fine brook flowing in it in spring and early

[1] Num. xxi. 20; comp. xxxiii. 45–47.

[2] Burckhardt, Syria, p. 366. Comp. above, p. 60.

[3] See Chap. II., Sect. I.

[4] Later Biblical Researches, pp. 364, 365.

[5] Later Biblical Researches, pp. 80, 81, 344.

summer is nearly used up in irrigating the southern part of the plain. The third valley is Wady el-Hamâm, coming in from the southwest. It has its beginning in the hills northwest of Hattîn, and descends to the plain of that village; which itself is but a terrace or step between the high tableland further south and the lower tract along the lake; and is skirted by a ridge along its northeastern side. Nearly opposite the village the Wady breaks down through this ridge by a deep and singular chasm. The sides of the upper or southwestern portion of the chasm are precipitous rock, five or six hundred feet in height. The length of the chasm is over a mile; its course about northeast; and it becomes gradually wider towards the lower end. About midway of the passage, there are caverns in the cliffs on each side; though fewer on the left. On the right several of these caverns are walled up in front; and these are now called Kŭl'at Ibn Ma'ân. Further down, at the mouth of the chasm, are many smaller excavations in the upper perpendicular cliffs.[1] The bed of the Wady, below the chasm, turns to the lake near Mejdel (*Magdala*). On the southeastern bank of Wady el-Hamâm, just above where it enters the chasm, is a site of ruins, now called Irbid. This is the *Beth-Arbel* of Scripture, and the *Arbela* of Josephus; near which the historian describes caverns in the face of a precipice, which was occupied by robbers as a fastness, from which they were dislodged by Herod.[2]

South of the lake of Tiberias, and below the mouth of the Hieromax, the Wady el-Bîreh descends from the west to the Jordan. It drains the country on the east and south of

[1] Later Biblical Researches, pp. 342, 343.

[2] Later Biblical Researches, pp. 342, 343. Joseph. Bel. Jud., 1. 16. 2–4. Antiq., 14. 15. 4, 5. Biblical Researches, II. p. 398 sq. [III. pp. 280, 281].

Mount Tabor; and is formed by two main branches, both deep; one coming from Khân et-Tujjâr on the northeast of the mountain; the other, Wady Sherâr, having its beginnings in the plain south of Tabor and around *Endor*. The united valley breaks down to the Ghôr by a deep and sharp chasm.[1]

We now come to the great scriptural *valley* (עֵמֶק) *of Jezreel*.[2] This extends from the plain of Jezreel or Esdraelon eastward; and is indeed the middle one of the three great arms, into which that plain divides itself towards the east. The valley lies between the mountains of Little Hermon on the north, and Gilboa on the south. Its beginning, the dividing line or watershed in the great plain, is near the villages Fûleh and 'Afûleh. From this point it sinks rapidly along the western end of Little Hermon, until it turns E. S. E. along that mountain. Its southwestern bank, in this upper part, is already more than a hundred feet high at the village of Zer'în (*Jezreel*); and is a steep and rocky declivity. The mountains on each side extend to the Ghôr, being about an hour apart. Jezreel in the west, and Bethshean in the east, were in sight of each other, at the opposite ends of this great avenue.

This valley forms a beautiful meadow-like plain, from two to three miles in breadth by about fifteen in length, watered by the great fountain of Jezreel, the Tubania of the crusaders, now called 'Ain Jâlûd.[3] There are also other fountains in the valley lower down; and the stream, as the Jâlûd, continues down to the Ghôr. The valley is very fertile, and is mostly cultivated, even to the top of the northern hills east-

[1] Later Biblical Researches, pp. 340, 341.

[2] Josh. xvii. 16; Judg. vi. 33; Hosea i. 5.

[3] 1 Sam. xxix. 1. Biblical Researches, II. p. 323 [III. p. 108].

ward of Little Hermon. The southern side is everywhere shut in by the bare rocky wall of Gilboa.[1] Beisân stands just upon the brow of the descent or offset by which this upper plain drops down to the lower level of the Ghôr. Towards the south, a portion of the upper plain stretches off along the eastern front of the mountains of Gilboa.[2] It was in the valley of Jezreel, that Gideon discomfited the Midianites; and here too was fought the battle between Israel and the Philistines, in which Saul and Jonathan were slain on Mount Gilboa.[3] This valley and the plain of Esdraelon furnish a direct and easy passage from the Jordan to the Mediterranean.

South of the mountains of Gilboa and of Sâkût comes in Wady Mâlih (Salt); so called from a place of salt springs found upon it. It begins near Teyâsîr (*Asher*);[4] and, passing down eastward for a time, afterwards winds off among the low hills and ridges, which here constitute the west side of the Ghôr. South of the low bluff on which Sâkût lies, Wady Mâlih reaches the Jordan as a broad valley with a deep channel.[5]

The next important valley is Wady el-Fâri'a; which has its remotest head in the plain of the Mŭkhna near Nâbulus, of which it is the drain. Another head begins northwest of Tŭllûzah, and is the main branch. The former, commencing some distance south of Nâbulus, and passing along on the east of the low ledge which is before the little plain of Sâlim, afterwards lies close to the eastern mountain, and sweeping around its northwestern flank, breaks down to

[1] Later Biblical Researches, pp. 338, 339.

[2] See above, p. 77.

[3] Judg. vi. 33, vii. 1 sq.; 1 Sam. xxix. 1, xxxi. 1–10.

[4] Josh. xvii. 7.

[5] Later Biblical Researches, pp. 306, 309.

the level of the Fâri'a by a deep and narrow chasm, along which the rocky strata are singularly dislocated. Below are several mills. The main branch comes down further north, with a fine stream. Still another valley and stream come in from the northwest, at Burj el-Fâri'a, a small ruined tower on a low bluff; and here too is a mill, with immense deposits from the water on the rocks. The streams unite some distance further down the valley. The general direction of the valley is about E. S. E. In one part it is a beautiful basin of meadow land, two or three miles in diameter, with the stream meandering through it. Below this meadow the valley is shut in by a spur from the northern hills and a projecting rock on the south, forming a narrow gorge or door, still an hour from the line of the Ghôr. The extreme eastern point of the northern hills, forming the bluff in the angle between the Fâri'a and the Ghôr, is called Makhrûd. Between this and Kŭrn Sŭrtabeh the broad plain of the Fâri'a merges in that of the Ghôr, here known as the Kŭrâwa.[1]

On the other side of Kŭrn Sŭrtabeh, which projects towards the southeast far into the Ghôr, between it and the next, and lower promontory of the western mountain, called el-Mŭskŭrah, a broad bay or offset extends up from the Ghôr. Into this offset descend two deep and precipitous gorges (the northern one is Wady Bursheh), which unite below, and form Wady Fŭsâil, from a site of ruins of that name, the representatives of the ancient Phasaëlis. In the northern chasm, nearly an hour above the present village, is a fine fountain, 'Ain Fŭsâil; the water of which flows to the village, and is there absorbed by irrigation.[2]

The deep gorge of Wady el-'Aujeh enters the Ghôr south

[1] Later Biblical Researches, pp. 301, 304.

[2] Later Biblical Researches, pp. 292, 293. Van de Velde Memoir, p. 122.

of el-Mŭskŭrah. It is known further up as Wady es-Sâmieh and Wady Muhâmeh ; and drains the region above and around Kefr Malik.[1]

The next valley is Wady en-Nawâ'imeh. Commencing in the northeast of Bethel, it passes between Deir Duwân and *Rimmon* as Wady el-Mŭtyah or el-'Asas, and breaks down to the Ghôr as a deep and precipitous gorge. Along this gorge we ascended in 1838 to Deir Duwân and Bethel from Jericho. The course of the Wady lies across the northern part of the terrace at the foot of the mountain, just north of the fountains of Dûk.[2]

Directly back of Jericho lies the wild glen by which the great Wady Kelt enters the Ghôr. This valley drains the whole region east of Jerusalem as far north as to Bethel. It receives many branches ; as Wady es-Suweinît, beginning between Bethel and el-Bîreh, and passing down between Geba and Michmash ; Wady Fârah, having its head south of Ramah ; and other shorter Wadys further south. These all unite in the high table-land above, and form the Kelt, in which, however, there flows no permanent stream. On the south side of the deep gorge by which it issues from the mountains, the road to Jerusalem climbs an 'Akabah (pass) of seven or eight hundred feet, in order to gain the higher region above. On this road, and within the gorge, is seen a deserted tower, now called Kâkôn.[3]

The stream of this valley in winter, with that of 'Ain es-Sultân or Elisha's fountain, which flows to it, is doubtless "the water of Jericho," which, at its confluence with the Jordan, marked the point of departure for the border between

[1] Later Biblical Researches, pp. 291, 292.

[2] Biblical Researches, I. pp. 444, 568, 572 [II. pp. 120, 303, 309].

[3] Biblical Researches, I. pp. 557, 558 [II. p. 288].

Benjamin and the sons of Joseph; namely, "from Jordan by Jericho, at the water of Jericho on the east, to the wilderness," etc.,[1] and the 'river' (נַחַל) mentioned in Scripture, as on the border between Judah and Benjamin, where this border ascends the mountain.[2] Wady Kelt would seem also, with more probability than any other valley, to be the 'brook' (נַחַל) *Cherith*, where Elijah hid himself and was fed by ravens. The prophet being at Samaria, the residence of Ahab, was directed to turn "eastward" to the Cherith, "that is, *towards* (עַל-פְּנֵי) Jordan."[3] Josephus, speaking apparently according to the natural tradition, says, that the prophet went to "the parts towards the south" (*τὰ πρὸς νότον μέρη*).[4] In the indefiniteness of the ancients as to points of compass, both of the above specifications may be taken as referring to the *southeast;* and are thus reconciled. Further, the names *Cherith* and *Kelt* are made up of corresponding Hebrew and Arabic consonants; the main difference being the change of *r* to *l*, which is not unusual.[5] We thus have, in favor of the proposed identity, this close resemblance of names and a probable location. Christian tradition was early at fault in respect to the Cherith. Eusebius and Jerome place it on the east of the Jordan; and, many centuries later, the crusaders found it in Wady Fŭsâil.[6] But in the latter case Josephus could hardly speak of the prophet as going from Samaria towards the south.

In the time of Saul, while the Philistines were encamped

[1] Josh. xvi. 1; comp. xviii. 12, 13. [2] Josh. xv. 7.

[3] 1 Kings xvii. 3-7. Not *before* nor *east of* Jordan; comp. Gen. xviii. 26, xix. 28; Judg. xvi. 3.

[4] Joseph. Antiq., 8. 13. 2.

[5] Gesen. Heb. Lex., letter ל. Comp. also the name of the place Ῥινοκόλουρα and Ῥινοόκουρα.

[6] Brocardus, c. 7, p. 178. Marin. Sanut., p. 247.

at Michmash, and Saul and Jonathan with about six hundred men lay at Gibeah of Benjamin, the Philistines sent out three companies of spoilers: one towards the north, to Ophra (Taiyibeh); one towards the west, to Beth-horon; and a third by "way of the border that looketh towards the valley of Zeboim towards the wilderness."[1] As Saul and his men lay at Gibeah, southwest of Michmash, the course of this last company was probably towards the south or southeast; and the 'border' spoken of was that between Benjamin and Judah. The *valley* (גֵּיא) *of Zeboim*, or Hyenas, then, would seem to have been an open valley lying in that direction from Michmash, and forming one of the head-branches of Wady Kelt. A town *Zeboim* is also named in Scripture as belonging to Benjamin; but, judging from the places with which it is enumerated, it must have been situated further west than Ramah, perhaps in or near the plain of Lydda.[2] Of course it had nothing to do with the above valley.

We come now to valleys more frequently mentioned in Scripture than any other; namely, those round about the Holy City. They are the 'brook' (נַחַל) *Kidron* on the north and east of the city, usually called the valley of Jehoshaphat; and the valley (גֵּיא) *of Hinnom* on the west and south. Upon the broad and elevated promontory within the fork of these two valleys, lies Jerusalem.[3]

The *Kidron* in Hebrew is a *Nahal* (נַחַל); which in the Seventy, the New Testament, and Josephus, is rendered 'winter brook' (χείμαῤῥος); and Josephus speaks of it also as a 'ravine' (φάραγξ).[4] It has its beginning just by the

[1] 1 Sam. xiii. 15–18. [2] Neh. xi. 34.

[3] Biblical Researches, I. p. 258 sq. [I. p. 380 sq.].

[4] Heb. and Sept., 2 Sam. xv. 23; 1 Kings ii. 38, etc.; John xviii. 1. Joseph. Antiq., 8. 1. 5. Also Joseph. Bel. Jud., 5. 2. 3, Ibid., 5. 4. 2.

tombs of the Judges, about half an hour N. by W. of the city, in a slight depression through which one begins to descend into the great Wady Beit Hanîna which goes to the Mediterranean. The region here, around the head of the Kidron, is very rocky, and full of excavated sepulchres; and these continue with more or less frequency on both sides of the valley all the way down to Jerusalem. The valley runs for fifteen minutes directly towards the city; it is here shallow and broad, and in some places tilled, though very stony. It then turns nearly east, almost at a right angle, for about ten minutes, passing on the north of the tombs of the Kings. Here it is still shallow; and is about two hundred rods distant from the present city. It then bends again to the south, and following this general course passes between the city and the mount of Olives.

Opposite the northern part of the city and above, the valley spreads out into a basin of some breadth, now tilled, and having plantations of olive and other fruit trees. Further down, the valley contracts and descends rapidly; and the steep western side becomes steeper and more and more elevated above the bottom. At the gate of St. Stephen this elevation is one hundred feet; at the southeast corner of the Haram-area it is one hundred and fifty feet. On the east the mount of Olives rises higher, but is not so steep. At the tomb of Absalom, so called, the bottom of the valley has become merely a deep gully, the narrow bed as of a torrent, from which the hills rise directly on each side. Beneath the southeast corner of the Haram, the valley makes a sharp turn for a moment to the right, and then passes down as before. This part is the narrowest of all; it is here a mere ravine between mountains. The corner of the Haram-area overhangs this part; the angle of the wall standing upon the

very brink of the steep declivity. Still further south the western hill declines towards the south as rapidly as the valley itself, the latter opens gradually, and receives from the west the Tyropœon with the rill from Siloam. Below this it becomes broader, and is tilled; and just below the point where the valley of Hinnom comes in, is the well of Job or Nehemiah, the ancient En-rogel.[1]

For about five hundred yards below this well, the valley continues its course S. S. W., and is from fifty to one hundred yards wide. It is here full of olive and fig trees; and is in most parts tilled and sown with grain. It then turns S. 75° E. for about half a mile; after which it takes a more southern course for a time, and passes on as a very deep, wild, rocky chasm, about E. S. E. to the Dead Sea, which it enters just south of Râs el-Feshkhah. On the right bank of this chasm, somewhat more than half way towards the Dead Sea, is situated the celebrated convent of Mâr Sâba, founded in the early part of the sixth century. From it the valley is called in that part and above, by the Arabs, Wady er-Râhib, 'Monks' valley;' while near to the Dead Sea it is known as Wady en-Nâr, 'Fire valley.'[2]

At the present day the 'brook' Kidron of Scripture is nothing more than the dry bed of a winter torrent. No stream flows in it now, except occasionally in the rainy season of winter, when after heavy rain the waters rush down into it from the neighboring hills, and form (though rarely) a torrent. Nor is there any evidence that there was anciently more water in it than at present.[3]

The *valley* (גֵּי) *of Hinnom* is called in Scripture also the

[1] Biblical Researches, I. pp. 268–272 [I. pp. 396–400].

[2] Biblical Researches, I. pp. 272, 382, 531 [I. p. 402, II. pp. 26, 249].

[3] Biblical Researches, I. p. 272 [I. p. 402].

valley *of the son* or *sons of Hinnom*.[1] It has its beginnings in a shallow depression or basin west of the northern part of the city; in the midst of which basin is the upper pool or reservoir, usually filled with water.[2] On the west a swell of land divides it from the valley in which is the convent of the Cross; on the south is a low hill; and beyond it the valley or plain of Rephaim. From the basin the open stony valley runs E. S. E. nearly to the Yâfa gate of the city; the depth of the valley at this point being about forty-five feet lower than the gate. It here turns south, and lies along under the steep western declivity of Zion, quite to its southwestern corner. Here only a low ridge or swell separates it from the plain of Rephaim. Higher up, nearly opposite the south wall of the modern city, the whole breadth of the valley is occupied by the ruins of an ancient reservoir, the lower pool.[3]

At the southwest corner of Zion the valley sweeps around to the east, and descends with great rapidity, between Zion and the opposite hill in the south, to the valley of the Kidron; which it enters about one hundred yards above the well of Job. The hill south of Hinnom is steep, rocky, and full of sepulchres. The southeastern corner of Zion, between the two valleys, runs down and out in a low point. At the junction of the two valleys there is an open oblong plot, reaching from the gardens below Siloam nearly to the wall of Job, and comprising also the lower portion of Hinnom. Its breadth is one hundred and fifty yards or more. The western and northwestern parts of this plot are in like manner

[1] Josh. xv. 8; Jer. xix. 2, 6; 2 Kings xxiii. 10, Keth.

[2] Isa. vii. 3. Biblical Researches, I. pp. 238, 326 [I. pp. 352, 483].

[3] Isa. xxii. 9. Biblical Researches, I. p. 327 [I. p. 485].

occupied by gardens; many of which are on terraces, and receive a portion of the waters of Siloam.[1]

In these gardens, lying partly within the lower end of the valley of Hinnom, Jerome fixes the place of *Tophet*, where the Jews practised the horrid rites of Moloch and Baal, and "burned their sons and their daughters in the fire."[2] Tophet was not the name of the valley; but was merely a place in the valley of Hinnom.[3] It was probably in allusion to this detested and abominable fire, that the later Jews applied the name of this valley, Gehenna (גֵּי־הִנֹּם, *γέεννα*), to denote the place of future punishment, or the fires of hell; and thus it was also used by our Lord and others in the New Testament.[4]

In the basin at the upper end of the valley of Hinnom, west of the city and near the upper pool, there was anciently a fountain called *Gihon*. A 'brook' (נַחַל) appears to have flowed from it down to the valley. This fountain Hezekiah caused to be stopped; and brought its waters "down to the west side of the city of David."[5] This was done for the purposes of military defence. The Son of Sirach also tells us, that "Hezekiah strengthened his city, and brought in water into the midst of it; he dug with iron into the rock and built fountains for the waters."[6] From all this it would seem to follow, that Hezekiah covered over the fountain of Gihon, and brought its waters into the city, and probably to the temple, by a subterranean channel. This inference has

[1] Biblical Researches, I. pp. 272–274 [I. p. 402–405].

[2] Jer. vii. 31; 2 Kings xxiii. 10; comp. Jer. xxxii. 35 with Jer. xix. 5.

[3] Ibid. Also Jer. vii. 32, xix. 6, 11–14. So 'the valley,' Jer. ii. 23.

[4] Matth. v. 22; xviii. 9; Mark ix. 43, 45; James iii. 6, etc.

[5] 2 Chron. xxxii. 4, 30; comp. xxxiii. 14, Heb. Biblical Researches, I. p. 346 [I. p. 512].

[6] Sirac xlviii. 17 [19], Cod. Alex.

been strengthened by an aqueduct hewn in the rock, discovered on Zion. Indeed, it is not impossible, that some connection may yet be detected, between the intermitting fountain in the valley below the Haram, and some channel now unknown bringing down the water of the ancient Gihon to the temple. It was to Gihon, or more probably to summer gardens below it, that Solomon was brought down from Zion, in order to be proclaimed king.[1]

When Abraham was returning from the slaughter of the kings, the king of Sodom went out to meet him "at the *valley* (עֵמֶק) *of Shaveh*, which is the *King's dale;*" and of Absalom it is related, that in his lifetime he erected for himself a monumental pillar in the same King's dale.[2] Josephus, speaking doubtless according to national tradition, says that this monument was two stadia, a quarter of a mile, distant from Jerusalem.[3] Now a valley at this distance from the city is found at three points, and no more. One is the upper part of the Kidron, where it runs first southeast and then east; the distance being reckoned from the northern (third) wall in the time of Josephus. Another is the head of the valley of Hinnom, around the upper pool. The third is the Kidron below the well of Job. The first of these is still marked by the elaborate tombs of the Judges and many other ancient sepulchres; the remaining two have none. The monument erected by Absalom was apparently in the nature of a sepulchral column or *cippus;* "for he said, I have no son to keep my name in remembrance;"[4] and a natural place for it would be in the upper Kidron, among other sepulchral monuments and sepulchres. The rock-hewn

[1] 1 Kings i. 33, 38, 45. Joseph. Antiq., 7. 14. 5.
[2] Gen xiv. 17; 2 Sam. xviii. 18. [3] Joseph. Antiq., 7. 10, 3.
[4] 2 Sam. xviii. 18; comp. Gen. xxxv. 20.

tomb now known as Absalom's, in the Kidron valley below and opposite the ancient temple, cannot here come into the account, for the distance does not agree; and its form is that of the rock tombs of Petra, belonging to a period later than the Christian era.[1] The King's dale, then, was the upper Kidron; and here the King of Sodom met Abraham returning from the north along the usual road, to reach his tents near Hebron.[2] If now the King's dale of Abraham and that of Absalom be the same, it follows conclusively, that the Salem of Melchizedek was Jerusalem; and not, as Jerome supposes, a Salem a few miles south of Scythopolis.[3]

The prophet Joel speaks of the *Valley* (עֵמֶק) *of Jehoshaphat*, as the place where God will judge the heathen for their oppression of the Jews.[4] This would seem to be merely a symbolical valley, in allusion to the signification of the name, *Jehovah judgeth*. There is not the slightest historical ground, either in the Scriptures or in Josephus, for connecting it with the valley of the Kidron. But it was very early so connected; for already in the fourth century we find Eusebius and others speaking of the Kidron as the valley of Jehoshaphat.[5] On a like slender foundation rests the popular belief current among Jews, Romanists, and Muhammedans, that the last judgment will be held in this valley.[6] Yet after this long usage of the name, there is now no valid reason why we should not still so employ it.

[1] Biblical Researches, I. pp. 349–352 [I. pp. 518-521]. [2] Gen. xiv. 13.

[3] Hieron. Ep. ad Evang., 73. Opera (ed. Martianay), II. p. 573. Later Biblical Researches, p. 333.

[4] Joel iii. [iv.] 2, 12.

[5] Onomast., Article *Cœlas*. Cyrill in Joel iii. [iv.] 2, 12. Itin. Hieros., p. 594 (ed. Wess.).

[6] Reland, Palaestina, p. 355. Quaresmius, II. p. 156. Mejr. ed-Dîn in Fundgr. des Or., II. p. 381. Biblical Researches, I. p. 269 [I. p. 396].

The prophet Isaiah speaks of Jerusalem itself as the *valley* (גֵּיא) *of Vision;* and Jeremiah also once called it simply *the Valley* (עֵמֶק).[1] The temple at Jerusalem, where Jehovah was enthroned, was properly the seat of vision; but why the city is addressed as *a valley*, is not so clear. Moriah, on which the temple stood, was separated from the higher western hills Zion and Akra, by a depression or valley within the city. Did perhaps the *valley* of the prophets refer to the fact, that from those higher points the temple appeared lower, and as if in a valley? Or did it refer to the more general feature, that the whole city lies upon the upper slope of the Kidron, and descends rapidly towards that valley?

Another valley mentioned in Scripture is also to be referred to the Kidron. The prophet Amos, to express the extent of the land from north to south, gives it as "from the entering in of Hamath unto the river of the wilderness."[2] Another sacred writer, presenting the same idea, says "from the entering of Hamath unto the sea of the plain," or Dead Sea.[3] In the first case it is the valley (נַחַל) of the *'Arabah;* in the second, it is in like manner the sea of the *'Arabah;* each being the southern limit. The former, therefore, would seem to be the Kidron, which enters the Dead Sea not far from its northern end.

There remains a single valley named in Scripture south of the Kidron. It is the valley of *Berachah*, or of Blessing, rendered memorable by the rejoicings of the Hebrews after the victory of Jehoshaphat.[4] It was in the "wilderness of Tekoa." At the present day there exists west of Tekoa a ruined town on the west side of a broad open valley running north; and both the town and the valley in that part bear the name

[1] Isa. xxii. 1, 5; Jer. xxi. 13.
[2] Amos vi. 14.
[3] 2 Kings xiv. 25.
[4] 2 Chron. xx. 26; comp. v. 20–23.

of Beraikût, corresponding to the ancient *Berachah*. The valley afterwards turns southeast; is then called Wady Khanzîreh; and appears to run to Wady Khŭreitûn.[1]

Along the western coast of the Dead Sea, south of the Kidron, several great valleys break down to the shore by deep and wild gorges; but as none of them are alluded to in Scripture, it is not essential to describe them here. Such are the Wadys Ta'amirah, Derejeh, el-Ghâr or 'Areijeh, el-Khŭbarah, es-Seyâl, etc.

### IV. VALLEYS RUNNING TO THE COAST.

The valleys of the western slope, along the coast, present in their upper portions the same general features as those already described. Having their commencement in the mountains and hill-country, they take their course sometimes for a long distance through the same, as deep chasms; and then break through and issue upon the western plains by narrow gorges, like those along the Ghôr. In the plains they are, for the most part, only shallow water-beds; by which the waters of the rainy season are drained off to the Mediterranean.

The northernmost valley to be mentioned here is found in the hill-country southeast from Tyre. Three valleys, converging from different points, come together in the plain around the village of Rumeish; one from the northeast near Bint Jebeil; another from the S. S. E. from around Kefr Bir'im and Sa'sa'; and the third from the southwest. From Rumeish the plain or broad valley extends N. N. W. for half an hour, when it contracts; but afterwards expands again into a smaller plain south of Dibl; after which it again con-

[1] Later Biblical Researches, p. 275. Wolcott in Bibliotheca Sacra, 1843, p. 43.

tracts. This valley is known as Wady el-'Ayûn ; and the direct road from Rumeish to Tyre passes along it as far as to its junction with Wady Seribbîn coming from the northeast from towards Tibnîn. Here the valley turns southwest, along the southeastern base of the outermost ridge. After following this course for some time, it again turns between west and northwest, issues from the mountains by a deep and narrow gorge, and as Wady el-'Azzîyeh skirts the northern base of the mountains to the sea near Râs el-Abyad.[1]

Between this promontory and Râs en-Nâkûrah further south, a shorter valley, Wady Hâmûl, breaks down through the mountains by a narrow gap to the coast.[2]

The great valley of the wild region back of Râs en-Nâkûrah and the plain of 'Akka, is the Wady el-Kŭrn. It drains a large tract of country ; having one of its two main heads above Beit Jenn in the southeastern angle of the mountains ; and the other in the little plain of Bukei'a further west. The valley forms everywhere a deep and wild chasm ; and is described by the Arabs, in true oriental style, as so deep and precipitous as to be impassable, so that even eagles connot fly across it. On an isolated cliff in this valley is situated the fortress of Kurein, the Montfort of the crusaders ; now in ruins and almost inaccessible. The great chasm by which the valley breaks down to the western plain and sea, not far south of en-Nâkûrah, is visible from 'Akka.[3]

The western part of the fine plain of Ramah, in the hill-country east of 'Akka, is drained by a head branch of Wady Sha'ab. It breaks through the ridge south of the plain by a gap ; and is there joined by another branch, coming from

[1] Later Biblical Researches, pp. 62, 67, 68.

[2] Later Biblical Researches, p. 65.

[3] Later Biblical Researches, pp. 66, 76, 77, 90.

Sŭkhnîn and 'Arrâbeh. The valley descends rapidly, and becomes deep and narrow, but is not rocky. The hills sink down gradually as it enters the plain; through which it passes on, as a meadow-like, marshy depression, to the river Na'mân, the ancient *Belus*, near its mouth. The permanent sources of the latter are in the plain. Wady Sha'ab has usually no water.[1]

The next important valley is Wady 'Abilîn, which there is good reason for regarding as the scriptural *valley* (גֵּיא) *of Jiphthah-el* on the border of Zebulun and Asher.[2] This valley has its main head in the fertile basin east of the sightly village of Kaukab, lying northeast from 'Abilîn. Into this basin there descends from the east a short open Wady, which separates the hill Deidebeh overhanging Kefr Menda from the line of hills further north. Just beyond the watershed at the head of this Wady is the site of Jefât, the ancient *Jotapata;* and from it a valley runs down southeast to the plain el-Bŭttauf at Cana; thus in a manner isolating the hill Deidebeh. From the basin above mentioned, Wady 'Abilîn sweeps off south and southwest around the high tract on which Kaukab stands; and turning northwest passes down on the north of 'Abilîn to the western plain; where it goes to the river Na'mân. The northern border of Zebulun was carried from Remmon, now Rummâneh, in the plain el-Bŭttauf, on the north to Hannathon; "and the outgoings thereof are in the valley of Jiphthah-el." Again, the eastern border of Asher, coming from Beth-dagon south of Carmel, "reacheth to Zebulun and to the valley of Jiphthah-el." It seems probable, therefore, that the line of hills between Sukhnîn and Kefr Menda was the northern boundary of Zebulun

[1] Later Biblical Researches, pp. 78, 85, 87, 88, 103.

[2] Josh. xix. 14, 27.

in this part; and that the valley of Jiphthah-el was no other than the great Wady 'Abilîn, which has its beginning in those hills near Jefât. There may be also some correspondence between the Hebrew *Jiphtah*, the Greek *Jotapata*, and the Arabia *Jefât;* inasmuch as the Greek term came through the corrupt dialect of the Galilaeans. Hence, the valley may have given its name to the place, or *vice versa*.[1]

The western part of the plain of Zebulun, el-Bŭttauf, is drained by a water-bed called Wady Bedawîyeh; which, still in the plain, is joined by another, draining the tract of country east of Seffûrieh and around Tur'ân nearly to Lûbieh. It passes off as a narrow plain in a southwesterly course, among low hills; and further down unites with Wady Seffûrieh, coming from the great fountain south of that place, with a fine brook. At some distance below it takes the name of Wady Melik, becomes narrower, and winds among higher hills, until it joins the Kishon, just as the latter enters the plains of 'Akka. The stream in it is understood not to be permanent.[2]

The 'river' (נַחַל) *Kishon* itself passes in a northwest course from the plain of Esdraelon to that of 'Akka by a valley between Carmel and the hills opposite. See in Chap. II. Sect. I.

South of the plain of Esdraelon the hills for a time are lower; and, though there are many valleys running in various directions, there are none at first which demand notice here. The fine plain around Dothan and Ya'bud is drained in that part by Wady Wesa', passing off west on the south of Ya'bud. Further down it takes the name of Wady Abu Nâr; and after a large bend to the south enters

[1] Later Biblical Researches, pp. 105, 107.

[2] Later Biblical Researches, pp. 110, 112, 113.

the western plain on the north of Jett; and goes to the sea as the river Abu Zabûra, south of Caesarea.[1]

Another valley, Wady Mussîn, coming down from the plain of Fendekûmieh, with a narrow and deep channel, was said to join the Wady Abu Nâr in the western plain. Others regard it as uniting with the next valley, Wady Sha'îr.[2]

Then follows the great Wady Sha'îr, coming from Nâbulus. The narrow valley between mounts Ebal and Gerizim, in which that city lies, has a gradual ascent for half an hour from the plain of the Mŭkhna to the town, situated directly upon the watershed, beyond which the valley descends towards the northwest. Hence all the waters coming down from Gerizim into the city, and all the fountains on that side, flow off northwestward; and the stream continues, even in summer, for several miles down the valley. The channel skirts the southern and western sides of the basin of Samaria, receiving all the waters drained from the adjacent regions; and passes out in the northwest by a deep valley between high hills near Râmîn. The bottom of this part of the valley, as also the hills, are in many parts cultivated; and there are in the valley many very old olive trees. At 'Anebta, an hour below Râmîn, are several mills, driven in winter by the stream. Down this valley, by 'Anebta and Tûl Keram, passes the ordinary camel road from Nâbulus to Ramleh and Yâfa; which, though circuitous, affords an easier descent and ascent of the mountain than any other. This valley sweeps round in the plain on the north of Kalŭnsaweh; and is marked on the recent maps as turning southwestward to the sea at the marshes near the village of

[1] Later Biblical Researches, pp. 121, 122.

[2] Later Biblical Researches, pp. 121, 125. Van de Velde's Map.

Failak. There is no permanent stream in its lower part, nor at the mouth.[1]

South of Nâbulus and Wady Sha'îr, the valleys which drain the western slope and brow of the mountains and enter the plain, as far south as to the parallel of Jerusalem, all converge in the plain, and run to the river 'Aujeh, north of Yâfa. Not one of them goes by itself to the sea. Among the northernmost of these valleys is Wady 'Azzûn, having its head above the village of that name; and winding by a deep and narrow course to the western plain, which it enters north of Hableh. The Wady here bends to the northwest, and, passing very near to Kilkîlieh on the north, then sweeps round to the S. S. W. and leaves Kefr Sâba (*Antipatris*) just on the right. Thence its water-bed passes down, as a depression in the rich and beautiful plain, to join the 'Aujeh. This plain is separated from the level tract immediately along the coast by a more elevated plateau, or range of low swells, occasionally rising into low hills. The Wady from the mountains is doubtless the 'river' which Josephus mentions as flowing by Antipatris.[2]

The next valley is the deep and rugged Wady Kânah, having its beginning in the southern part of the plain Mŭkhna, near Nâbulus, which it serves to drain; the northern part of the same plain, as we have seen, being drained by Wady el-Fâri'a and the Jordan. Wady Kânah passes out from the plain as a deep valley through the western hills, between the villages Kûza and 'Ain Abûs. Near Deir Estieh

[1] Later Biblical Researches, pp. 125-128. Wilson, Lands of the Bible, II. p. 255. Wildenbruch in Monatsh. der Ges. für Erdk., 1844, I. p. 232, and Table V. Van de Velde's Map.

[2] Later Biblical Researches, pp. 135, 136, 138. Joseph. Antiq., 16. 5. 2; comp. 13. 5. 1.

it becomes wide and is cultivated; here several fountains spring up in it. Further west it resumes its dark and rugged character; and enters the plain half an hour south of Hableh, where it bears the local name of Wady Zâkûr, from a ruined village on its northern side. It runs off just south of Jiljûlieh to the water-bed in the plain; and so goes to the 'Aujeh.[1] There seems to be no reason to doubt but that this is the 'river' (נַחַל) *Kanah* of the book of Joshua, which was the boundary in this part between Ephraim and Manasseh. From the point where the valley leaves the mountains, the border between these tribes probably was drawn directly to the sea, at or near Arsûf.[2]

The next important valley has its head at 'Akrabeh, several miles east of the Mŭkhna, at a watershed in the plain below that village. From that point, one Wady goes eastward to the Jordan; and the other, as Wady Bîr Jenâb runs westward, by Kŭbalân and south of the Mŭkhna, and descends to the western plain as Wady Ribâh, about half an hour north of Mejdel Yâba. In the plain it joins the water-bed from Kefr Sâba, and so goes to the 'Aujeh.[3]

Next follows the great Wady Belât, called also in its lower part Wady Kŭrâwa, from a village of that name on the north of it. This valley drains a large extent of the mountain region. It has three main head-branches. One begins south

[1] Biblical Researches, II. p. 273 [III. p. 93]. Later Biblical Researches, pp. 135, 139. See the next note but one.

[2] Josh. xvi. 8, xvii. 9.

[3] Biblical Researches, II. p. 272 [III. p. 92]. Later Biblical Researches, pp. 139, 140, 296. The above account of Wady Ribâh as also of Wady Kânah and Wady Belât or Kŭrâwa, is founded either on personal observation or on information collected by Dr. Eli Smith and myself in 1838 and 1852, and given to the public in the Biblical Researches. The Map of Van de Velde (1859) represents them somewhat differently; on what authority is not known.

of Jufna (Gophna); and runs for a time in a northerly course, receiving smaller Wadys from the east; it is here deep, but open and cultivated. After turning northwest it receives a large and deep branch, coming down on the north side of Sinjil and Jiljilia, and having its head in the plain of Turmus 'Âya south of Shiloh. The third branch has its head just in the north of Shiloh, passes down through the little plain of Lubban, and as Wady Lubban breaks through the western hills by a deep notch, and goes to join the Belât near Kŭrâwa. The united valley issues from the mountains ten minutes south of Mejdel Yâba, as Wady Kŭrâwa; and passing down on the south of the great fountain at Râs el-'Ain, goes to the southern side of the 'Aujeh.[1] Northwest of Gophna there is a shorter branch Wady, which runs westward just south of Tibneh (*Timnah*), and joins the Belât below. Across the valley from Tibneh is the hill of *Gaash;* and this and other deep valleys round about are probably the 'brooks' (נַחֲלֵי) *of Gaash*, so named in Scripture.[2]

Another large valley, draining a wide extent of the western slope and brow of the mountains, passes down along the plain on the east and north of Ludd (Lydda), and so northwest to the river 'Aujeh. It is here known as Wady Ludd; or also sometimes as Wady Muzeiri'ah. Where the Sultâna, or great caravan road crosses it north of Lydda, it is spanned by a long bridge of three or more arches, one of the best in Palestine; showing that although dry in summer, yet in the rainy season a torrent of water rushes along its bed. One head branch of this valley has its beginning beyond Ram

[1] Biblical Researches, II. pp. 263–266, 271 [III. pp. 77–82, 90]. Later Biblical Researches, p. 140. See the preceding note.

[2] 2 Sam xxiii. 30; 1 Chron. xi. 32. Bibliotheca Sacra, 1843, pp. 481, 496. See above, pp. 41, 42.

Allah, not far from the southernmost head of Wady Belât, and passing down as a rugged chasm north of that village, issues from the mountain north of the lower Beth-horon; but whether it there turns south to the plain of Beit Nûba, or goes on directly west to join Wady Ludd above the bridge just described, is not certainly determined.[1] The main trunk, however, of the valley, above Ludd, is Wady 'Atallah, coming from the southeast from the fine plain of Beit Nûba. Into that plain descends Wady Suleimân, which drains the western portion of the plain around Gibeon; and up which ascends the ordinary camel route from Ramleh and Lydda to Jerusalem. From the western part of the plain of Beit Nûba, Wady 'Atallah passes off about W. N. W. to the foot of the ridge on which stands the village of Kubâb. Here it receives Wady 'Aly from the left; and bending more to the N. N. W. proceeds through the rolling plain to Lydda, where it becomes Wady Ludd.[2]

Wady 'Aly has its head just on the brow of the mountain back of Sârîs; and receiving apparently other like Wadys from the right, descends steeply to the region of hills below; and sweeping to the south around the river Lâtrôn, goes to the 'Atallah on the north of Kubâb. Along this valley passes up the mountain the direct road from Ramleh to Jerusalem by Kubâb, Sârîs, and Kuriet el-'Enab; less circuitous but more difficult than the route by Wady Suleimân.[3]

Scripture makes mention of three valleys, which can only be referred to some of the branches of the great Wady at Lydda; apparently to those near the mountains. Thus the

[1] Biblical Researches, I. p. 453, II. p. 250 [II. p. 133, III. p. 59]. Later Biblical Researches, p. 142.

[2] Later Biblical Researches, pp. 143–145.

[3] Later Biblical Researches, pp. 156, 157, 160.

*valley* (עֵמֶק) *of Ajalon* is certainly identified with the plain of Beit Nûba (Merj Ibn 'Ömeir) by the circumstance that Yâlo (*Ajalon*) still lies upon the hills on its southern border. This plain connects Wady Suleimân with Wady 'Atallah. Joshua, pursuing the five kings from Gibeon, looked down from the heights of the upper Beth-horon upon this beautiful vale, and pronounced the sublime command: "Sun, stand thou still upon Gibeon; and thou moon, in the valley of Ajalon."[1] Another is the *valley* or *plain* (בִּקְעָה) *of Ono* once named by Nehemiah; Ono, of course, being in or near the plain. But the town Ono is several times mentioned; and is always coupled with Lod (Lydda).[2] It follows that Ono was not far distant from Lydda; and as the word *Bik'ah* signifies 'a plain shut in by mountains,' the plain of Beit Nûba would seem to correspond both in respect to form and nearness to Lydda. And as there is no other known plain in the region of Lydda which does thus correspond, we may assume the plain of Ono as lying around Beit Nûba. Mention is twice made of *the valley* (גֵּיא) *of Craftsmen* (*Harashim*); which also is directly coupled with the place Ono.[3] It must therefore have been near Ono; and may have been a side valley opening into the plain of Beit Nûba.

The next estuary south of the river 'Aujeh and Yâfa, is the Nahr Rûbîn at Yebna, the ancient *Jabneh* or *Jamnia*. The name Rûbîn comes from a Wely on the hills north of Yebna. The stream is not permanent. In October, 1817, Irby and Mangles found the bed nearly dry above the bridge; but below there was a fine sheet of water. In October, 1857,

[1] Josh. x. 10–12. Later Biblical Researches, p. 145.

[2] Valley of Ono, Neh. vi. 2. Ono, the town, Neh. vii. 37, xi. 35; Ezra ii. 33; 1 Chr. viii. 12.

[3] Neh. xi. 35; 1 Chron. iv. 14.

Tobler found no appearance of water.[1] The Wady comes from the southeast through the plain, from 'Ain Shems, the ancient Beth-shemesh. It passes that place on the north side, as a broad and fertile plain, at the foot of the projecting ridge on which Sŭr'ah (*Zorah*) is situated. Here and throughout the plain it is known as Wady Sŭrâr. This plain of the Sŭrâr extends up east and northeast far into the mountains; the projecting ridge of Zorah lying in front and enclosing it on the west. The upper portion of this enclosed plain is almost wholly shut in by lofty precipitous ridges. Into the northeastern part of this recess, just east of the village Yeshû'a (ancient *Jeshua*), descends the deep and narrow chasm of Wady Ghŭrâb; and further south, with a high intervening ridge, the still deeper and wilder chasm of the great Wady Isma'îl coming from Kulônieh. The large watercourses of these two Wadys unite towards 'Ain Shems to form Wady Sŭrâr; and the channel runs down on the north of that ruin. The plains thus shut in, are beautiful and fertile.[2]

These two great valleys, Wady Isma'îl (or Isma'în) and Wady Ghŭrâb, drain the whole mountain region south of el-Bîreh and west of Jerusalem and Bethlehem. The former has its remote beginning just south of el-Bîreh in a hollow way leading down to the open tract west of er-Râm; while other heads are in the plain north and west of Gibeon, draining them at first southeast into this valley; which, as Wady Beit Hanîna, passes close under the village of that name; and so, in a southwesterly course, and afterwards W. S. W. along the southeasterly base of the ridge on which are situated Neby Samwîl, Kŭstŭl, Sôba, and Kesla. Opposite to

[1] Irby and Mangles, 1847, p. 57. Tobler Dritte Wanderung, pp. 20, 25.

[2] Later Biblical Researches, pp. 153, 154.

the villages Kulônieh and Sâtâf, the great Wady is for a time called by those names. Near the village 'Akûr, another deep side valley comes in from the east, made up of three branches. One of these, Wady el-Werd, comes from the plain of Rephaim just southwest of Jerusalem; another is Wady Ahmed, coming from Beit Jâla and the tract west of Bethlehem; and the third is Wady Bittîr, which has its head near el-Khŭdr (St. George) and joins the other near the village Bittîr. Beyond this village the whole valley is called Wady Bittîr, or also Wady Hanîyeh, from the fountain in it near Welejeh. Below 'Akûr the great united valley passes off W. S. W. as Wady Isma'îl; and breaks down through the high ridge by a wild and rugged chasm to the little plain above 'Ain Shems.[1]

Northwest of the ridge of Kŭstŭl and Sôba, the whole tract quite to the western brow of the mountain, is drained by the two branches of Wady Ghŭrâb. The longest and largest begins at some distance northeast of Beit Nŭkkâba and north of Kŭstŭl; and lies close along the northwestern base of the high ridge of Sôba. The shorter branch, which also is deep and rugged, begins just by Sârîs; and leaves on the west only the high thin ridge forming the western brow of the mountain.[2]

Three valleys named in Scripture appear to be connected with the preceding great Wady Sŭrâr and its head branches; two of them on the mountains, and one in the plains. The first is the *valley* (עֵמֶק) *of Gibeon*, referring apparently to the narrower plain between Gibeon and the ridge of Neby Sam-

[1] Biblical Researches, I. pp. 455, 575, II. pp. 4, 5 [II. pp. 136, 314; III. p. 325]. Later Biblical Researches, pp. 158, 267. Tobler Dritte Wanderung, pp. 163, 197.

[2] Later Biblical Researches, pp. 155–158.

wîl, probably as the scene of Joshua's overthrow of the five kings.[1] The second is the *valley* (עֵמֶק) *of Rephaim* or *the Giants*, southwest of Jerusalem, on the border between Judah and Benjamin. It is a broad valley or plain, separated from the valley of Hinnom only by a swell of rocky ground; and in it Wady el-Werd has its beginning. Here David fought a great battle with the Philistines, as narrated also by Josephus.[2] The remaining scriptural name, in or near the plain, is the *valley* (נַחַל) *of Sorek*, where Samson found Delilah. As Samson's home was at Zorah, overlooking the plain of Wady Sŭrâr and also towards the east the plain or recess shut in among the mountains, it is probable that the valley of Sorek was in that region. In accordance with this, Eusebius and Jerome testify, that in their day a village called *Capharsorech* (Kefr Sorek) was still shown not far from Zorah.[3] The *valley* of Sorek, then, was probably either the Sŭrâr itself, in that part, or some side valley opening into it within the recess. The name appears to come from the excellence of the vines and vineyards in this fine southern exposure.

The great valley next south of the Sŭrâr, bears in the plain the name of Wady es-Sŭmt or es-Sŭnt, Acacia valley, from trees of that kind scattered in it. Two main branches unite to form it, Wady el-Musŭrr in the northeast, and Wady es-Sûr in the south-southeast. Wady el-Musŭrr has its head not far northwest of el-Khŭdr (St. George), and passes down by Jeb'ah, having received several other deep Wadys which break down from the brow of the mountain at and near Beit Sakâ-

[1] Isa. xxviii. 21; comp. Josh. x. 10–12. Biblical Researches, I. pp. 454, 455 [II. p. 135].

[2] Josh. xv. 8, xviii. 16; also 2 Sam. v. 18, 22, xxiii. 13, 14. Joseph. Antiq., 7. 4. 1. Ibid., 7, 12. 4.

[3] Judg. xvi. 4. Onomast., Article *Sorech*.

rich.[1] Its course is there about west. South of Beit Nettîf it receives Wady es-Sûr from the left; and the united valley becomes Wady es-Sŭmt. Wady es-Sûr has its beginning near Beit Nŭsîb, and is a fine open valley or plain.[2] After the junction, Wady es-Sŭmt continues its course westwards for an hour, as a broad, fertile plain with moderate hills on each side. It then bends to the north, passing on the right of Tell Zakarîya; and turning afterwards more to the left, reaches the plain. We were told in 1838 that it runs to the Sŭrâr; but later information makes it continue by itself to the sea, not far north of Esdûd.[3]

On the south side of the noble plain of Wady es-Sŭmt, as it stretches off for an hour below the junction of its two branches, in a gap of the southern hill, are seen the ruins of Shuweikeh, the ancient *Socoh* of the plain of Judah, coupled in Scripture with Jarmath and Azekah.[4] Scripture also tells us that the Philistines "were gathered together at Socoh, which belongeth to Judah, and pitched between Socoh and Azekah. . . . . And Saul and the men of Israel were gathered together and pitched by *the valley* (עֵמֶק) *of Elah*, and set the battle in array against the Philistines. And the Philistines stood on a mountain on the one side, and Israel stood on a mountain on the other side; and there was a valley between them."[5] This graphic description enables us at once to identify this part of Wady es-Sŭmt with the *valley of Elah*, the scene of David's combat with Goliah, the

[1] Biblical Researches, II. p. 5 [II. p. 327]. Later Biblical Researches, p. 284.

[2] Biblical Researches, II. pp. 220, 223 [II. pp. 12, 16].

[3] Biblical Researches, II. pp. 5, 20, 21 [II. pp. 326, 349]. Tobler Dritte Wanderung, pp. 181, 197.

[4] Josh. xv. 35.

[5] 1 Sam. xvii. 1–3.

first essay of the youthful warrior and poet as the champion of Israel.[1]

On the north side of Beit Jibrîn, the ancient *Eleutheropolis*, a long valley comes out from the mountains, known as Wady el-Feranj, lying between Idhna and Terkûmieh. Its heads are deep ravines breaking down on the north of Teffûh (*Beth Tappuah*) and from towards Dûra (*Adora*) and Hebron in the southeast. After passing Beit Jibrîn it turns north as a fine broad open valley among the low hills; enters the great western plain; and sweeps around on the south of Tell es-Sâfieh, the *Alla Specula* of the crusaders, towards the southwest. It passes just on the east of the village Bureir; then turns west, having the village of Simsim on the north side; and bending more northwest goes to the sea, without a permanent stream, just south of Askelon. In the plain this valley is known as Wady Simsim; and has the character of a broad and rich depression, with a gravelly water-course usually dry.[2] Where it bends west around Bureir, it receives from the east the similar valley, Wady el-Hasy, which drains the region of lower hills as far south as the region of el-Burj, and passes down on the north side of Tell el-Hasy, as a broad meadow-like tract.[3]

There is no direct scriptural allusion to the great valley just described; unless, perhaps, a portion of it may be the *valley* (גֵּיא) *of Zephathah* near Maresha, where King Asa defeated the hosts of Zerah the Ethiopian.[4] Maresha, we know, was situated about a mile southeast of Beit Jibrîn; and the broad valley running from the latter nearly to Tell es-Sâfieh,

[1] 1 Sam xvii. Biblical Researches, II. p. 21 [II. p. 349].

[2] Biblical Researches, II. pp. 24, 35, 46, 49, 71 [II. pp. 355, 371, 388, 391, 427].

[3] Biblical Researches, II. pp. 47, 48 [II. pp. 387-390].

[4] 2 Chron. xiv. 10.

may well have been the battle-field in question, taking its name, *Zephathah*, from the neighboring Tell.

Another remarkable event of scriptural history probably took place in one portion of this valley in the plain; I mean the baptism of the eunuch by Philip. This evangelist, being at Samaria, was directed by an angel to "go toward the south, unto the way that goeth down from Jerusalem unto Gaza, which is desert."[1] This last expression cannot well refer to Gaza; it was not true in fact when the book of Acts was written. It belongs, therefore, rather to the angel, specifying which of the several roads from Jerusalem to Gaza Philip was to visit. It was the road leading through the *uninhabited* district, without towns and villages; and of course the southernmost road. It corresponds to the present road from Beit Jibrîn to Gaza; which now, as anciently, is also the main route from Hebron to Gaza. This route lies along on the north side of the meadow-like tract of Wady el-Hasy, and also of Wady Simsim for a short distance below the junction. In the gravelly bed of these valleys we saw, in May, 1838, water percolating through the sand and gravel, and forming occasional pools. It was probably on this road that Philip found the eunuch, and baptized him. Philip himself was next found at Azotus (Ashdod), a few miles north of this very spot.[2] This definite mention of the 'desert' and of Azotus, are decisive against the legendary traditions, which fix the place of the baptism anywhere upon the mountains, either north of Hebron or southwest of Jerusalem.[3]

The next great valley in the plain, Wady esh-Sheri'ah, comes from Beersheba, south of all the mountains, where it

[1] Acts viii. 26; comp. v. 5.

[2] Acts viii. 39, 40.

[3] Biblical Researches, II. p. 514 [II. p. 640]. Later Biblical Researches, p. 278.

is known as Wady es-Seba'. It takes its way northwest through the plain to the sea not far south of Gaza, where at its mouth it is called Wady Ghuzzeh, and is without perennial water. It forms a depressed plain, with a gravelly waterbed. Not far east of Beersheba its two branches unite, coming from different points. One is from the southeast, having its beginning beyond Aroer; it receives a tributary from the northeast from beyond el-Milh, and passes around the southwestern extremity or bluff of the last ridge of mountains, south of Kŭrmŭl.[1] The other and larger branch comes from the northeast from beyond Hebron. It has its heads east of Halhul; and extending down as a deep valley between Hebron and Beni Naim, it continues on the same general course southwesterly to the junction near Beersheba. The shorter parallel valley in which Hebron lies, runs into the same some distance below the town; and from that point, if not above, the great valley bears the name of Wady el-Khŭlîl.[2]

To the preceding valley or its branches there seem to be three separate references in Scripture. Thus in Genesis, we find Jacob abiding in the *vale* (עֵמֶק) *of Hebron*, and sending out Joseph to Shechem to visit his brethren.[3] This valley, of course, can only be that in which Hebron lies; and which runs to the great valley further south. Scripture also names *the brook* (נַחַל) *of Eshcol*, whence the spies cut down a branch with one cluster of grapes, and bore it between two upon a staff; and, the valley, it is said, was called *Eshcol* (cluster), because of the cluster of grapes thus cut down.[4] This inci-

[1] Biblical Researches, II. pp. 198–200 [II. pp. 616–619].

[2] Later Biblical Researches, p. 281. Biblical Researches, I. p. 489, II. p. 206 [II. pp. 186, 629].

[3] Gen. xxxvii. 14; comp. vs. 12, 13.

[4] Num. xiii. 23, 24; comp. Num. xxxii. 9; Deut. i. 24.

dent is related in connection with the visit of the spies at Hebron; and it is well known that to the present day the vineyards and grapes of Hebron are superior to those of any other part of Palestine. Further, of the three Hebronites, Aner, Eshcol, and Mamre, who accompanied Abraham in his pursuit of the five kings, the name of Mamre was connected with the 'oaks of Mamre,' where Abraham dwelt; and in like manner the name of Eshcol probably had some relation to the rich valley of vineyards.[1] We may therefore without hesitation identify the valley of Eshcol with that valley near Hebron, which to the present day is marked beyond others by the number and excellence of its vineyards. Such is the valley coming down towards the city from the northwest, known as Wady Teffûh; up which leads the road to that place and Beit Jibrîn. In the same valley is also the celebrated Sindiân oak. The vineyards along this valley are very fine, and produce the largest and best grapes in all the country. Pomegranates also and figs, as well as apricots, quinces, and the like, still grow there in great abundance.[2]

When David and his men returned from near Jezreel to Ziklag, which had been given him by Achish king of the Philistines, in the south of Judah, they found that city plundered and burned by a horde of Amalekites from the southern desert.[3] David immediately pursued them "with six hundred men, and came *to the brook* (נַחַל) *Besor;*" where

[1] Gen. xiv. 24, xiii. 18.

[2] Biblical Researches, I. p. 214 [I. p. 316]. Van de Velde says he heard at Hebron the name of a fountain, *'Ain Eskali*, a few minutes north of the city; Mem., p. 310; Narr. II. p. 64. But the Arabic scholar G. Rosen, Prussian consul at Jerusalem, in describing Hebron, writes the name of the same fountain as *'Ain Kashkala*, the *k* in each case representing *Kôf*. Zeitschr. der morg. Ges., 1858, p. 481, and plate.

[3] 1 Sam. xxx. 1, 2; comp. xxvii. 6, xxix. 1, 11.

"two hundred abode behind, which were so faint that they could not go over *the brook Besor;*" having just come from a long march of three days.[1] As the exact position of Ziklag has not yet been determined, it is difficult to decide with certainty as to the 'brook' Besor. Yet we know that Ziklag was one of the 'uttermost' towns of the tribe of Judah, 'toward the coast of Edom southward;' and was afterwards given with other cities of the same region to Simeon.[2] In the lists of both tribes, Ziklag stands next to Hormah, which we know to have been quite in the southeastern quarter.[3] The Philistines had apparently come around by Beersheba on the south of the mountains; and made themselves masters of Ziklag and probably other places in the open region north of Aroer and east of Moladah (el-Milh); both which towns are named in connection with Ziklag.[4] The Amalekites, we are told, had "made an invasion upon the south of the Cherethites [Philistines], and upon what belongeth to Judah, and upon the south of Caleb;" and thence had gone to Ziklag.[5] They would seem to have approached from the southwest; penetrated into Judah as far as to the neighborhood of Hebron the possession of Caleb;[6] and then turned south across the mountain by Maon or Moladah to Ziklag, which they destroyed.[7] From Ziklag they probably took a southwesterly course, in order to regain the usual highway of the desert, lying west of the mountains further south.

[1] 1 Sam. xxx. 9, 10; comp. vs. 1.

[2] Josh. xv. 21, 31, xix. 5. All the towns of Simeon appear to have been situated in this southeastern quarter of Judah.

[3] Num. xiv. 45, xxi. 3; Deut. i. 44; Judg. i. 17. Biblical Researches, II. pp. 181, 198 [II. pp. 592, 617].

[4] Josh. xv. 26; xix. 2; 1 Sam. xxx. 26, 28.

[5] 1 Sam. xxx. 14.

[6] Josh. xiv. 13; xv. 13.

[7] Biblical Researches, II. pp. 97, 203 [II. pp. 466, 624].

This course from Ziklag would take them across the Wady 'Ar'ârah, the southeastern branch of Wady es-Seba', running from Aroer to Beersheba; and this in all probability was the 'brook Besor' of the narrative.

South of Beersheba, the great valleys or water-courses are known only along the main highway of the desert leading from Sinai to Beersheba. Thus at el-Khŭlasah, the ancient *Elusa*, passes Wady el-Kŭrn; which lower down receives Wady Ruhaibeh, coming from the place of ruins of that name further south. Below the junction of these two, the valley thus formed is called, according to one account, Wady es-Sŭny, and goes to the Sheri'ah near the sea; while according to another account, it is Wady Khŭberah, a fertile valley, which goes to Wady el-'Arîsh.[1] A valley also reaches the sea at Khân Yûmas, some distance south of Gaza.[2] To some portion or branch of these valleys south and southeast of Gaza, is doubtless to be referred *the valley* (נַחַל) *of Gerar*, where Isaac pitched his tent, after he left the city of Gerar.[3]

Only one more scriptural valley remains to be noticed in this quarter; and that is *the river* or rather *torrent* (נַחַל) *of Egypt;* which of old was the boundary between Palestine and Egypt.[4] At the present day it is called Wady el-'Arîsh; and comes from the passes of Jebel et-Tîh towards Sinai, draining the great central longitudinal basin of the desert. It reaches the sea without a permanent stream; and is still the boundary between the two countries. Near its mouth is a small village, el-'Arîsh, on the site of the ancient *Rhi-*

[1] Biblical Researches, I. p. 202 [I. p. 298].

[2] Irby and Mangles, p. 55. Richardson's Travels, II. p. 195.

[3] Gen. xxvi. 17; comp. xx. 1, xxvi. 1, 6.

[4] Num. xxxiv. 5; Josh. xv. 4, 47; comp. 1 Kings viii. 65; 2 Kings xxiv. 7; Isa. xxvii.; 2 So too, simply 'the river,' torrent, Ezek. xlvii. 19, xlviii. 28.

*nocolura;* as is shown by columns and other Roman remains.[1]

NOTE. — In the book of Psalms mention is once made of a *valley* (עֵמֶק), *of Baca*, that is, 'valley of weeping,' 'vale of tears.'[2] Here, under the figure of a desert, joyless valley without water, the Psalmist would seem to present human life, or some portion of it; which the righteous journeying through, by their trust in God it becomes to them a fruitful and joyous valley gushing with fountains. Their suffering is changed into rejoicing, their sorrow into joy.

[1] Biblical Researches, I. p. 199 [I. p. 293]. Irby and Mangles, 1847, p. 54. Richardson's Travels, II. p. 191.

[2] Ps. lxxxiv. 7, Heb. See De Wette and Hengstenberg in loc.

## SECTION III.

### PLAINS.

MANY of the PLAINS of Palestine are the bottoms of broad valleys; and, as such, have been described in the preceding Section. Such are the plains included in the Ghôr, and in the valley of Jezreel, Wady el-Fâri'a, and others.

We begin with the plains lying along the coast, as the most important.

#### I. PLAINS ALONG THE COAST.

In the north, the southern extremity of the long and narrow Phenician plain, south of Tyre, first claims our notice. On the east, low ridges run down into it from the hill-country; and leave an actual plain of only some three or four miles in breadth. This is not specially fertile. On the south, it is skirted by the higher ridges which go to the sea, and form Râs el-Abyad in the north and Râs en-Nâkûrah (the Ladder of Tyre) in the south.

These ridges separate the plain of Tyre from the plain of 'Akka; which extends from the ridge forming Râs en-Nâkûrah to the base of Carmel, a distance of about twenty miles. The average breadth is from four to six miles. On the east is the hill-country of Upper Galilee, occasionally wooded, rising for the most part steeply from the plain; but yet with frequent ridges running out in low points and

gradually losing themselves in the plain.[1] The whole tract is fertile and well watered, having many fountains and two larger streams, the Belus and Kishon. The region south of 'Akka is apparently lower ground, affording large tracts of pasturage. Here in April, 1852, we saw, what is not usually seen elsewhere in Palestine, persons occupied in mowing and hay-making. In the same region several isolated Tells rise up in the plain.[2] This plain, like the preceding, is not directly referred to in Scripture.

On the southwestern side of Mount Carmel, the spurs and valleys, which constitute its more gradual slope on that side, fill up for a long distance the interval between the mountain and the sea. For some time, and more towards the south, a low ledge of rocks runs parallel to and near the shore; and the space between it and the water is mostly covered with drift-sand.[3] It is only in the vicinity of Caesarea, that the hills recede, and the plain opens to the extent of seven or eight miles. Here begins the celebrated plain of *Sharon*, several times mentioned in Scripture for its rich fields and pastures, in connection with Carmel and Lebanon.[4] It extends, with an average breadth of about ten miles, as far south as to Lydda and Joppa; a length of over thirty miles. Jerome, in one place, makes the region lying between Lydda, Joppa, and Jamnia, belong to it.[5] The tract immediately along the shore is low, and in some parts marshy; the interior part, along the base of the hills, is everywhere fertile and cultivated. Between these two tracts, north of the river

[1] See Later Biblical Researches, pp. 88, 89.

[2] Later Biblical Researches, pp. 102, 103.

[3] Wilson, Lands of the Bible, II. pp. 248, 249, 253.

[4] Isa. xxxiii. 9, xxxv. 2, lxv. 10; 1 Chron. xxvii. 29.

[5] Acts ix. 35. Onomast., Article *Saron*. Hieron. in Jes., 65, 10. Reland, Palaestina, pp. 188, 370.

'Aujeh, rises a low plateau, or range of low hills, some of them wooded, but of less fertile land. This extends half way to Caesarea, and causes all the valleys from the mountains, in that part, to turn southward to the 'Aujeh.[1] The wood scattered in the plain is deciduous oak, rising in the north into trees, but in the south exhibiting only bushes.[2] It was probably from the frequency of this tree, that the plain was anciently also called *Drumas* (*Δρυμός*); which the Seventy have sometimes put for Sharon.[3]

Near to Lydda, and therefore probably in some connection with the plains of Sharon, or rather perhaps with the Sephela, was *the valley* or *plain of Ono*, once mentioned in Scripture. This was apparently the plain around Beit Nûba, north of Ajalon; as we have already shown.[4]

The whole great maritime plain of the tribe of Judah, south of Lydda and Joppa, comprising the country of the Philistines, is called in the Hebrew *the Sephela* (הַשְּׁפֵלָה, Gr. *ἡ Σεφηλά*); signifying properly 'low country,' and sometimes so rendered in the English Version; as likewise by 'low plain,' 'plain,' and 'valley.'[5] Eusebius and Jerome describe it as the great plain extending around Eleutheropolis (Beit Jibrîn), in the north and in the west; it included Beth-shemesh and Ajalon.[6] It extended to Gaza and beyond; but

[1] Later Biblical Researches, p. 138.

[2] Wilson, Lands of the Bible, II. p. 254.

[3] Septuagint, *Δρυμός*, Isa. lxv. 10; *Σάρων*, Isa. xxxiii. 9; *Τὸ πεδίον*, Cant. ii. 1. Reland, Palaestina, p. 188 sq.

[4] Neh. vi. 2. See above, p. 113.

[5] So Engl. 'low country,' 2 Chron. xxvi. 10, xxviii. 18; 'low plain,' 1 Chron. xxvii. 28; 2 Chron. ix. 27; 'plain,' Jer. xvii. 26; 'valley,' Josh. xi. 16; Judg. i. 9. Gr., *ἡ Σεφηλά*, Sept., Jer. xxxii. 44, xxxiii. 13; 1 Macc. xii. 38. Sept. usually, *ἡ πεδινή* or *τὸ πεδίον*.

[6] Onomast., Article *Sephela*. 2 Chron. xxviii. 18.

the southern border is nowhere specified; and the country in that quarter is often spoken of under the name of *Daroma*, 'the south' (Heb. דָּרוֹם, Gr. ὁ Δαρωμᾶς), although this name comprehended not only the plain, but all the south of Palestine.[1] We may assume the length of the Sephela at not less than forty miles; the breadth in the north being about ten miles, and widening gradually towards the south to some twenty miles at Gaza. On the west a line of sand-hills separates it from the waters of the Mediterranean; while on the east it is bordered by the tract of lower hills intervening between the mountain and the plain. South of the mountains, the plain extends up eastward to Beersheba and beyond.

### II. PLAINS IN THE HILL-COUNTRY WEST OF THE GHÔR.

Both the historian of the Maccabees and Josephus relate, that the host of the Syrians was encamped at Kedesh of Galilee; that Jonathan with his host pitched by the "water of Gennesar," apparently on the high ground northwest of the lake of Galilee; that early in the morning they made their way to *the plain of Asor*, where the Syrians met them, having set an ambush in the adjacent mountains; that at first, when the ambush rose behind them, Jonathan's troops were discomfited and fled; but afterwards recovered themselves, put the Syrians to flight, and pursued them to Kedesh, even to their tents, and there encamped.[2] This description points quite definitely to the plain stretching south from Kedesh for the distance of about three miles, to the brow of the deep and almost impassable ravine of Wady Hendaj. On

[1] Reland, Palaestina, pp. 185–187.

[2] 1 Macc. xi. 63, 67–75, Vulg. Joseph. Antiq., 13. 5. 6, 7.

that brow, overlooking the ravine and the lake of the Hûleh, is the Tell with ancient remains now known as el-Khuraibeh. This plain is accessible from the south, only by passing along the basin of the Hûleh as far as Wady Hendaj; and then ascending the mountains. The Syrians had set an ambush in these mountains; and came out in force from Kedesh upon the plain to meet the Jews. They were finally driven back; and their tents at Kedesh captured. There can here be no doubt that the *Asor* of this passage is a later form for the earlier name *Hazor*, the city of the Jabins; the plain having thus retained the name, long after the city had passed away. Hazor is twice mentioned in direct connection with Kedesh, and overlooked the Hûleh. Its site was in all probability at Tell Khuraibeh.[1]

South of the higher mountains of Naphthali, are several parallel plains, stretching from east to west across the hill, and separated from each other by ridges or ranges of hills. The northernmost of these is the plain of Ramah, which we first saw from the brow of the mountain south of Beit Jenn. It is shut in on the north by this mountain; and on the south by a lower ridge, on the eastern part of which is Tell Hazûr. At the western end of the plain are the rocky hills overlooking the plain of 'Akka; while its eastern end is skirted by only a slight ridge. The length from east to west is about ten miles, with an average breadth of less than two miles. Through it passes the great road from 'Akka to Damascus, by way of the bridge of the Jordan.

[1] 2 Kings xv. 29; Josh. xix. 35-37. Joseph. Antiq., 5. 5. 1. See Later Biblical Researches, p. 365. The Greek in 1 Macc. xi. 67 now reads, εἰς τὸ πεδίον Νασώρ, repeating apparently the final *Nun* of πεδίον before the initial vowel of 'Ασώρ. This latter form is several times read in Josephus. So too the Vulgate. Reland, Palaestina, p. 597.

This plain is very fertile; and is full of very old olive trees, called by the natives *Rûmy* or 'Greek,' from an indefinable impression that they are older than the Muhammedan conquest. The eastern part of the plain, as far as to Ramah, is drained by a head water-course of Wady Sellâmeh, which sweeps round from the east and passes out through a gap on the west of Tell Hâzûr; whence it runs to the plain and lake of Gennesareth. The fine western basin of the plain is drained by the beginnings of Wady Sha'ab; which latter in like manner passes off through another gap in the southern ridge; and then turns west to the plain of 'Akka. The prospect from the brow of the mountain above Ramah, over this plain and the country further south, is very beautiful, and is scarcely surpassed in Palestine.[1]

Passing over two or three ridges and ranges of hills, with intervening smaller plains, we come to the noble plain now known as el-Bŭttauf, and called by Josephus *the great plain of Asochis*.[2] It was properly the plain of Zebulun; the *Rimmon* of that tribe being still recognized in the Rŭmmâneh of this plain.[3] Its length is about ten miles from east to west, by a breadth of about ten miles. On the north are the ranges of hills, among which Jotapata was situated; and at the southern base of which, about midway of the plain, is still found the deserted village of Kâna; the ancient *Cana of Galilee*. The highest of these hills, now called Deidebeh, is near Kefr Menda.

On the south the plain is shut in on its southeastern part by a steep and almost isolated ridge, dividing it from the lesser plain of Tu'rân beyond; and ending towards the west

[1] Later Biblical Researches, pp. 78–80.

[2] Joseph. Vita, 41. Later Biblical Researches, pp. 110, 111.

[3] Josh. xix. 13; 1 Chron. vi. 77 [62].

near Rŭmmâneh. West of this the plain is bordered on the south by the low hills and broken tract towards Seffûrieh. On the east also are low hills towards Hattîn; and on the west similar heights, with a conspicuous isolated Tell, called el-Bedawîyeh. The whole eastern portion of the plain has no outlet for its waters; so that in winter it becomes a lake, extending sometimes as far west as to the road between Kâna and Rŭmmâneh. The western portion is drained towards the southwest by Wady Bedawîyeh; which, still in the plain, receives the Wady coming from Tu'rân. Further down it becomes Wady Melik, and goes to the lower Kishon. This whole plain is of the richest fertility; and was a glorious portion of the inheritance of Zebulun.[1]

We come next to the great *plain of Esdraelon*, lying between Tabor and Carmel, and between the hills of Galilee on the north and those of Samaria on the south. This plain, as we have seen, completely interrupts the line of hill-country; and forms, in connection with the valley of the Kishon in the west, and its own middle arm in the east, an easy roadway from the coast to the river Jordan. The elevation of the watershed of the plain, near el-Fûleh, is about four hundred feet above the Mediterranean; but it cannot well be less than one thousand feet above the Jordan.[2]

The great plain, in the proper sense, is triangular in form; having its southernmost angle at or near Jenîn. A line drawn from this place northward, along the magnetic meridian, would touch the western extremities of the two mountains Gilboa and Little Hermon, and strike the northern hills a little east of the mount of Precipitation so called. The length of this eastern side is not far from fifteen miles.

[1] Later Biblical Researches, pp. 109–111.

[2] See above, p. 32.

From Jenîn, again, the hills that skirt the southwestern side of the plain stretch off from S. E. by S. to N. W. by N., and the length of this side is eighteen or twenty miles. On the north, the hills, which at first rise more abruptly, extend in the general direction from E. N. E. to W. S. W., and run down at length into the line of lower hills over against Carmel. The length of this northern side is about twelve miles. This large triangle is everywhere an almost level tract of unsurpassed fertility; but its rich soil is now in great part neglected.

East of this triangle, the plain of Esdraelon sends out towards the brow of the Jordan valley three great arms, each nearly an hour in breadth, and separated from each other by the ridges of Gilboa and Little Hermon. That is to say, these two parallel ridges, rising in the eastern part of the great plain, divide it into these three great branches. The remarkable and distinguishing feature of these three portions of the plain is, that while both the northern and southern decline towards the west, and their waters flow off through the Kishon to the Mediterranean; the middle arm sinks down between them eastward, so that its waters, from a point within the triangle, run with a far more rapid descent to the valley of the Jordan at Beisân.[1]

This great middle arm has already been described as the *valley of Jezreel*.[2] The northern branch, lying between Little Hermon and Tabor, is definitely marked by the high and steeper mountains which rise abruptly from its sides. It extends around and beyond Tabor, quite to the brow of the Jordan valley, and also towards the north; but in this part

[1] Biblical Researches, II. p. 362 [III. pp. 227, 228]. See above, pp. 26, 27.

[2] See above, pp. 91. 92.

the surface is uneven, and sometimes rugged.[1] The southern arm or offset of the great plain runs up southeastward from Jenîn, between the hills of Samaria on the south, here higher than further west, and a range of naked rocky heights on the north, forming the northwestern extension of the mountains of Gilboa towards Jezreel. This branch of the plain is about three quarters of an hour broad; and rises with a perceptible ascent towards the southeast for four or five miles beyond Jenîn. On its sides are several villages; and on the higher ground beyond the arm, lies the village of Jelbôn, corresponding to the ancient name *Gilboa*.[2]

Singular as it may appear, this great plain is only twice directly referred to in Scripture; and then not as the plain of Jezreel, as from later usage we might expect; but as *the plain* (בִּקְעָה) *of Megiddo*, so called from the place of that name upon its western quarter.[3] It is a *Bik'ah*, a plain shut in by mountains and hills. When later, under the Romans, the name Megiddo was lost, and the same place was called *Legio*, the plain also was spoken of as *the plain of Legio*.[4] It was called by Josephus simply *the Great Plain*.[5] In Greek the name 'Jezreel' appears also in the corrupted form *Esdraela;*[6] and hence the name *Esdraelon* for the plain. It is found already in the apocryphal book of Judith, in the form *Es-*

[1] Biblical Researches, II. pp. 330, 331 [III. p. 180]. Later Biblical Researches, p. 340.

[2] Biblical Researches, II. p. 316 [III. p. 157].

[3] 2 Chron. xxxv. 22; Zech. xii. 11. The English Version has wrongly 'valley.'

[4] Eusebius, πεδίον τῆς Λεγεῶνος; Jerome, 'campus Legionis,' Onomast., Articles *Gabatha, Arbela, Cimon*, etc.

[5] Joseph. Bel. Jud., 3. 3. 1. Antiq., 8. 2. 3. Reland, Palaestina, pp. 366, 367. So too Eusebius, Onomast., Article *Itabyrion*.

[6] Ἐσδραηλά, Eusebius, Onomast., Article *Jezrael*. Hence the still more corrupt form *Stradela*, Itin. Hieros., ed. Wessel., p. 586.

*drelom;* and was current in the middle ages.[1] At the present day this noble plain is known as Merj Ibn 'Âmir.

The great plain and its environs have been in every age the scene of battles. We know from Scripture, that Deborah and Barak, descending with their forces from Mount Tabor, discomfited the host of Sisera with his "nine hundred chariots of iron," from Endor to Taanach and Megiddo, where the Kishon swept them away.[2] It was in the broad valley below Jezreel, that Gideon achieved his triumph over the Midianites; and again Israel pitched in the same valley before the fatal battle in which Saul and Jonathan were slain upon Mount Gilboa.[3] It was likewise in the plain, not far from Aphek, that Ahab and the Israelites obtained a miraculous victory over the Syrians under Benhadad; while near Megiddo the pious King Josiah, attacking the Egyptian host in spite of the warnings of their monarch, perished in the conflict.[4]

South of the middle of the great plain, and at first sight appearing like a bay or offset running up among the southern hills, is another beautiful plain, not mentioned in Scripture; though once spoken of in the book of Judith, as lying around Dothan.[5] We may call it, therefore, the 'plain of Dothan.' It is separated from the great plain by a narrow tract of swells or rolling land; through which pass one or more valleys, draining the northern part to Esdraelon. The length of the plain of Dothan, from Bŭrkîn in the north to its southern end beyond Ya'bud, is five or six miles. Its breadth is irregular; since various offsets run up from it

[1] Judith i. 8, iv. 5 [6], vii. 3. Brocardus, cc. 5, 6. Adrichom., p. 35.

[2] Ps. lxxxiii. 9, 10; Judg. iv. 12–15, v. 19–21.

[3] Judg. vi. 33, vii.; 1 Sam xxix. 1, xxx.

[4] 1 Kings xx. 26–30; 2 Chron. xxxv. 20–24; 2 Kings xxiii. 29, 30.

[5] Judith iv. 6, *τοῦ πεδίου τοῦ πλησίου Δωθαΐμ.*

among the adjacent hills; as at Kefr Kûd (*Caparcotia*) in the northwest, and at Kŭbâtieh in the southeast.[1] The plain sweeps around the hill on which Ya'bud stands, towards the S. S. W., and is drained off in that direction by a valley. In the broadest part of the plain, between Ya'bud and Kŭbâtieh, but nearer the latter, stands Tell Dothân, the site of ancient *Dothan*, with a fountain.[2] Here then is the plain where Joseph's brethren were feeding their father's flocks when Joseph visited them, and was sold by them to Midianites, and carried into slavery in Egypt. The route of the Midianites was obviously the same that is now followed. Crossing the Jordan to Bethshean and Jezreel, their way then led through this fine plain; and down the valley at its southwestern quarter to the western plain, and so to Ramleh and Egypt.[3]

Not far southeast of the plain of Dothan, on the east of Sânûr and overlooked by that fortress, is spread out another beautiful plain, oval or round in form, three or four miles in diameter, and surrounded by picturesque hills not very elevated. It is perfectly level, with a soil of rich dark loam, exceedingly fertile. The plain has no outlet for its waters; which therefore in winter collect upon it and form a temporary lake. The Arabs say, the plain drinks up its own waters. It is planted chiefly with millet, a summer crop; though in some parts, where the surface is higher, wheat is also sown. The plain is called Merj el-Ghŭrŭk, equivalent to Drowned Meadow.[4]

Along the eastern base of the mountains Ebal and Geri-

[1] Wolcott in Bibliotheca Sacra, 1843, p. 76. Biblical Researches, II. pp. 317, 318 [III. p. 154].

[2] Later Biblical Researches, pp. 121, 122.

[3] Gen. xxxvii. 17-36. Later Biblical Researches, p. 122.

[4] Biblical Researches, II. p. 313 [III. pp. 152, 153].

zim lies the fine plain known as the Mŭkhna, extending from S. S. W. to N. N. E. for eight or nine miles, with an average breadth of one and a half or two miles; it being narrower in the south and north, and broader in the middle. At about two thirds of its length from south to north, the valley of Nâbulus comes in from the west between Gerizim and Ebal. The hills along the eastern side are lower but rocky, and often project into the plain. Directly opposite the mouth of the Nâbulus valley, an offset or arm of the plain runs up at right angles among these eastern hills, for nearly three miles in length by half a mile in breadth. Between it and the Mŭkhna lies a low ridge of rocks.

The southern part of the Mŭkhna is drained by the beginning of Wady Kânah, which passes out by a deep chasm in the western mountains. But from a point considerably south of Nâbulus the water-course of the plain runs north, near the base of the eastern hills. It passes on the east of the low ridge between the Mûkhna and the eastern offset; receives the water-course of that arm; and then passing out again, lies close along the base of the eastern mountain. North of the valley of Nâbulus the Mŭkhna soon contracts, and becomes rather a slope from the side of Ebal to the water-course. The latter passes down northeast, by a narrow chasm with singularly broken and contorted strata, to join Wady Fâri'a. Both the Mŭkhna and its eastern arm produce good crops of wheat and millet; though the soil seems to be less fertile than that of most of the other plains.[1]

The Mŭkhna is not directly mentioned in Scripture. It was, however, probably the place where the sons of Jacob

[1] Biblical Researches, II. pp. 273, 274, 279 [III. pp. 92–94, 101, 102]. Later Biblical Researches, pp. 298, 299.

fed their father's flocks at Shechem, before they went to Dothan.[1] The *Shalem* near Shechem, to which Jacob first came on his return from Padan-aram, was apparently the Sâlim of the present day, a village in the northwest part of the smaller eastern plain.[2] Jacob's well, where our Lord talked with the Samaritan woman, is still seen in the mouth of the valley of Nâbulus; and around it is "the parcel of ground that Jacob gave to his son Joseph."[3]

In Isaiah we read of a *valley of Gibeon*, according to the English Version; but the Hebrew has it a *valley* or *plain at Gibeon* (עֵמֶק בְּגִבְעוֹן).[4] The direct reference is probably to the tract or valley between the ridge of Gibeon and the higher one of Neby Samwîl. This is strictly an *'Emek;* but it is only an arm of the fine plain which extends for two or three miles on the north and west of Gibeon nearly to the brow the mountains. The soil is fertile and productive. The western part is drained by the heads of Wady Suleimân; while the waters of the eastern portions flow off southeast to the great Wady Beit Hanîna, which after several changes of name reaches the western plain as Wady es-Sŭrâr.[5] The allusion of the prophet is to the battles fought near Gibeon; especially that in which Joshua discomfited the five kings, who had come up against Gibeon.[6]

The *valley* or *plain* (עֵמֶק) *of Rephaim* (*the Giants*) is situated S. S. W. of Jerusalem; and the road to Bethlehem

[1] Gen. xxxvii. 12-14.

[2] Gen. xxxiii. 18. Biblical Researches, II. p. 279 [III. p. 102]. Later Biblical Researches, p. 298.

[3] John iv. 5, 6; Gen xxxiii. 19, xlviii. 22; Josh. xxiv. 32. Biblical Researches, II. p. 286 [III. p. 108]. Later Biblical Researches, p. 132.

[4] Isa. xxviii. 21.

[5] Biblical Researches, I. p. 454 [II. p. 135].

[6] Josh. x. 1-11; comp. 1 Chron. xiv. 16. See more above, pp. 115, 116.

passes along on its eastern side. It is higher than the valley of Hinnom; and is separated from it only by a low, rocky swell. The hills around it are also not elevated. It is drained towards the southwest by Wady el-Werd. It has already been described among the valleys.[1]

In speaking of king Uzziah's husbandry, it is said, "he had much cattle, both in the low country and in the plains."[2] The Hebrew word here rendered 'plains' (מִישׁוֹר) signifies *level ground*, *a level spot* or *tract;* and as here contrasted with the 'low country' or Sephela, would seem to refer to level ground or level tracts in the higher hill-country of Judah.

In the English Version we read of *the plains of Moreh* and *the plain of the Magicians* (*Meonemim*), near Shechem; also *the plain of Tabor* near Jerusalem, and *the plain of Mamre*, near Hebron.[3] But the Hebrew word (אֵלוֹן) thus rendered 'plains,' refers rather to a strong durable tree, especially *an oak;* and is so rendered by all the ancient interpreters. The above passages ought therefore to read, *the oak of the Magicians*, *of Tabor; the oaks of Moreh*, *of Mamre.*

### III. PLAINS IN THE GHÔR.

The Ghôr itself, as we have seen, is strictly a *Bik'ah*, or plain between two ranges of mountains; and as such its various portions have already been described. It is necessary here only to enumerate these different parts, and refer to our former descriptions.

1. The basin of the Hûleh; including *the valley* or *plain of Lebanon*, and the *valley at Beth-rehob;* see pp. 75, 76, and 81.

[1] See more above, p. 116.

[2] 2 Chron. xxvi. 10.

[3] Deut. xi. 30; Judg. ix. 37; 1 Sam. x. 3; Gen. xiii. 18, xiv. 13.

2. *The Plain el-Batîhah*, at the north end of the lake of Tiberias; see p. 77.

3. *The plain of Gennesareth, el-Ghuweir*, on the west side of the same lake; see p. 77.

4. Opposite Beisân, from the lake of Tiberias to Sâkût, called by Josephus *the Great Plain;* see p. 78.

5. *The plain el-Kŭrâwa* in connection with Wady Fâri'a; see p. 79.

6. *The plain of Jericho*, south of Kŭrn Sŭrtabeh; see pp. 79, 81.

7. *The plains ('Arboth) of Jericho, the plains ('Arboth) of Moab;* see p. 74.

8. *The plain* or *circuit* (*Kikkar*) *of Jordan*, in general; see p. 85.

For other valleys or valley-plains within the Ghôr, see pp. 81, 83.

## IV. PLAINS EAST OF THE GHÔR.

For *the plain* or *valley* (בִּקְעָה) *of Mizpeh*, eastward of the basin of the Hûleh, see p. 85.

East of the lake of Tiberias lies the great *plain of Haurân*, now called en-Nŭkrah, an immense level tract, which may be called table-land as compared with the depressed lake and Ghôr. It is bounded on the west by Jebel Heish, the lake, and Jebel 'Ajlûn; and on the east by the Lejah (the ancient Trachonitis) and the mountain of Haurân. It extends from the southernmost sources and affluents of the river A'waj (the Pharpar) in the north to the unexplored desert in the south. The length is from forty to forty-five miles; the greatest breadth perhaps thirty-five opposite the lake. The surface is greatly undulating, with occasional low Tells rising in various parts. The whole plain is volcanic, being

an outlier of the vast volcanic region on the east. The soil is of a dark brown color, almost without stones; in general exceedingly fertile, and arable throughout. With the higher tracts of Haurân it is regarded as the granary of Damascus.

The plain is drained wholly (except the few Wadys that run to the lake) by the river Yarmûk or Hieromax and its many branches; the chief of which have their beginning on Jebel Haurân, and wind as deep chasms through the plain. The elevation of the western part of the plain is estimated by Russegger at about two thousand five hundred feet; showing a rapid ascent from the borders of the lake.

This plain is the ancient *Hauran* of Ezekiel,[1] the *Amaritis* of the Greeks and Romans; though some of the northern portion may have been included in the districts of *Iturea*, *Trachonitis*, and *Gaulonitis*. It was all comprised in the *Bashan* of the Hebrews; and belonged to Manasseh.[2]

There remains to be noted *the plain of the Belka*, as it is now called, the elevated plateau along the summit of the mountains which border the Dead Sea upon the east. This tract was given to the tribes of Reuben and Gad. It extends from near es-Salt to Kerak and beyond; a distance of some forty-five to fifty miles in length, by a breadth of ten to fifteen miles. As compared with the high land on the west of the sea, around Hebron, the elevation of this plain cannot well be less than about three thousand feet above the Mediterranean, or four thousand three hundred feet above the Dead Sea.[3] On the west the plain is skirted by the hills and ridges

[1] Ezek. xlvii. 16, 18.

[2] Biblical Researches, 1841, III., App., p. 150. Burckhardt, Syria, p. 285 sq. Porter's Handbook, p. 499. Wetzstein in Zeitschr. für allg. Erdk., Aug. 1859, pp. 130, 131. Russegger, III. p. 215. Comp. above, pp. 54–56.

[3] See above, p. 60.

forming the crests or brow of the lofty mountains which rise steeply from the sea; while from the plain itself these crests appear but little elevated. On the east is the desert, on about the same level; sometimes with chains of hills along the border. Many water-courses, and some deep chasms (as that of the Arnon) pass off through the plain westward, and break down through the mountains to the sea. Through these chasms there are frequent views of the Dead Sea and the country beyond. In the plain there are isolated Tells; but it has not many trees, except along the western part, where there is considerable wood in some places. The soil is very fertile, but is left untilled; the whole region being given up to pasturage; for the excellency of which it is greatly celebrated.[1]

This high plain of the Belka is several times mentioned in Scripture, chiefly in connection with the approach of the Hebrews to the Promised Land.[2] The Hebrew word is here *Mishôr* (מִישׁוֹר), signifying 'a level tract,' and rendered in the English Version, by 'plain, plain country.' Portions of this 'plain country' are also definitely referred to in two other passages.

When the Hebrews, in approaching Palestine, turned from the eastern desert into the inhabited country north of the Arnon, they went (according to the Hebrew) "from Bamoth to the plain or basin (הַגַּיְא) which is in the country (field) of Moab, to the top of Pisgah, which overlooketh the wilderness."[3] This *Gai* or basin was perhaps some depressed tract in the plain near to the heights or crest of Pisgah, where the

[1] Seetzen, Reisen, I. pp. 407, 410. Burckhardt, Syria, pp. 364-366. Irby and Mangles, 1847, pp. 142, 146. See above, pp. 59-61, 67, 68.

[2] Deut. iii. 10, iv. 43; Josh. xiii. 9, 16, 17, 21, xx. 8; Jer. xlviii. 21.

[3] Num. xxi. 20; comp. Num. xxxiii. 47, 48. See above, p. 63.

waters were gathered in winter, and flowed off through a common channel. Or, the word *Gai* might possibly be referred to the whole plain, as being skirted on each side by hills; just as the Ghôr itself is spoken of as a *Gai*.[1]

In Genesis it is related, that Chedorlaomer and the kings with him "smote the Emims in *the plain* (שָׁוֵה) *of Kiriathaim*."[2] The city Kiriathaim lay, as we have seen, on the southern part of Jebel 'Attârûs; and the plain in question was therefore probably along the eastern base of that mountain.[3]

[1] See above, p. 82.

[2] Gen. xiv. 5.

[3] See above, p. 67.

# CHAPTER II.

## WATERS.

When Moses led Israel towards the Promised Land, he described it to them by way of contrast with Egypt; where, without rain, their supply of water had to be raised from the Nile or from wells: "For the land is not as the land of Egypt, whence ye came out, where thou sowedst thy seed and wateredst it with thy foot,[1] as a garden of herbs; but the land, whither ye go to possess it, is a land of hills and valleys, and drinketh water of the rain of heaven." "For the Lord thy God bringeth thee into a good land, a land of brooks of water, of fountains and depths, that spring out of valleys and hills."[2] What Palestine was then, such it is now; a land of fountains and brooks in winter; the flow of which, however, from the warmth of the climate and the unclouded sunshine of a long summer, is confined within brief courses for a large portion of the year. While in summer there are few streams, there are yet many fountains; which supply water for man and beast, and sometimes for irrigation.

[1] Referring probably to a machine for raising water, turned by the foot; see Biblical Researches, I., Note II., at the end.

[2] Deut. xi. 10, 11, viii. 7.

## SECTION I.

### RIVERS AND MINOR STREAMS.

The River of Palestine is the Jordan. No other stream in the country strictly deserves the name of river; unless it be one or two of the tributaries of the Jordan from the east. On the coast the streams of the Belus, the lower Kishon, and the 'Aujeh have considerable water; but the permanent course of each is very short.

#### I. THE JORDAN AND ITS SOURCES.

The Jordan, after the junction of all its head streams, expands into the lake of the Hûleh. Then, after rushing down a rocky chasm for several miles, it again spreads out into the lake of Tiberias. From this lake its course is comparatively uninterrupted, until it enters the Dead Sea.

Hence the Jordan may be treated of in three divisions, viz:

*The Upper Jordan*, extending from the sources to the lake of Tiberias. The direct length of this part, from Tell el-Kâdy and Bâniâs to that lake, is about twenty-five miles; the source, at Hâsbeiya, being some ten miles further north.

*The Middle Jordan*, from the lake of Tiberias to the narrow pass opposite Kŭrn Sŭrtabeh; a direct distance of about forty-five miles.

*The Lower Jordan*, from Kŭrn Sŭrtabeh to the Dead Sea; a distance of about twenty miles.

The whole length of the Jordan, therefore, from Hâsbeiya to the Dead Sea, including the two lakes, is not far from one hundred and fifteen miles.

*The valley of the Jordan*, as usually spoken of, is the Ghôr, the broad depressed plain shut in between two ranges of mountains. But below the lake of Tiberias, the Jordan flows in its own well-defined and still deeper valley, winding through the plain of the Ghôr. Along and within this deeper valley, the channel of the river winds exceedingly; and is, in most parts, fringed by a narrow tract of verdure on each side, made up of trees, bushes, reeds, and luxuriant herbage.

Name. The name *Jordan* comes to us from the Hebrew through the Greek (יַרְדֵּן, Ἰορδάνης), the Hebrew name being always written in the Old Testament, except in two places, with the article, *the Jordan* (הַיַּרְדֵּן). It comes from the root יָרַד, *to go down*, or spoken of a stream, *to flow;* hence *the Jordan* signifies 'the flowing,' perhaps with some allusion to its rapid descent and swift current. At the present day it is called by the Arabs *esh-Sheri'ah*, 'the watering-place;' sometimes with the addition of *el-Kebîr*, 'the Great.' Yet the name *el-Urdun* (Jordan) is not unknown in Arabian writers.[1]

An early and current derivation, coming down at least from the time of Jerome, regards the word *Jordan* as made up from the names of the two streams from Bâniâs and Dan; the former, it was said, being called *Jor* (יָאר), and the other *Dan*. That all this is without foundation, is shown by the fact that the name Jordan was current in the days of

[1] Abulfeda, Tab. Syr. p. 147. Schulten's Index in Vit. Saladin, Article *Fluvius Jordanes*.

Abraham and the patriarchs, at least five centuries before the name of Dan was given to the city in question.[1]

Upper Jordan. Sources. The Jordan is formed by the junction of three large perennial streams, issuing from immense fountains, near Hâsbeiya, at Tell el-Kâdy, and at Bâniâs. All along the base of Hermon, indeed, there are springs and rivulets, which run to those streams; and large fountains also send their waters to the lake of the Hûleh; but no one reckons these among the proper sources of the Jordan. So too the brook in Wady Zaâ'reh, which comes down to Bâniâs; and the Derdârah, the streamlet from Merj 'Ayûn, are neither of them perennial in their whole course; and are therefore not to be regarded as permanent sources of the Jordan.[2]

*The Hâsbâny.* The stream from Hâsbeiya is called Nahr Hâsbâny. It flows along the great Wady et-Teim, which runs up at the western base of Hermon as far as to the region around Râsheiya; and then, descending, continues on till it is merged in the Bŭkâ'a, near the great fountain of 'Anjar. The whole of Wady et-Teim is north of the line of Palestine proper; and we speak of it here only with reference to the upper portion of the Hâsbâny.

The source of the Hâsbâny is ten or twelve miles in a direct line above the mouth of Wady et-Teim; near the opening of the side valley which leads up east to Hâsbeiya, and almost a mile and a half distant from that town. Here a ridge running down on the north side of the short lateral valley, terminates in a volcanic bluff, at the foot of which the fountain bursts forth in the very channel of Wady et-

[1] Gen. xiii. 10, 11, xxxii. 10, l. 10, 11; comp. Judg. xviii. 29. See Later Biblical Researches, p. 412, note.

[2] See above, pp. 84, 89.

Teim; sending forth at once a large volume of water. At present a strong and permanent dam is thrown across just below the fountain. A head of water is thus raised and a small pond formed, from which the water is turned into a wide mill-race. In this way all the beauty and romance of the spot are destroyed. The fountain, as such, is not visible; except that just above the dam the water is seen boiling up on the surface of the pool, and quite across it. There are a few trees along the banks, and a large rock rises on the east side of the pool. About thirty rods below the fountain there is a bridge across the stream.

This fountain is the remotest perennial source of the Jordan; though never alluded to by any ancient writer. There are, indeed, small fountains further up the valley, but their waters do not reach this spot. Yet in the rainy season a great body of water descends from the upper part of Wady et-Teim and the heights of Jebel esh-Sheikh around Râsheiya, causing a formidable torrent along the valley.[1]

Wady et-Teim is, in many parts, full of spurs and ridges jutting out from the base of Hermon. Along the narrow dell thus formed in the west, the limpid stream of the Hâsbâny rushes murmuring, usually fordable, except as sometimes almost hidden in deep chasms. About six miles below Hâsbeiya a fine stream comes in from the east, from 'Ain Seraiyib, a large fountain at the foot of Hermon. This is regarded as one of the main feeders of the Hâsbâny; and is said to be far more copious in winter than in summer. This stream, as we saw it in May, was about one fourth part as large as the Hâsbâny.[2]

At some distance further down, and nearly opposite Khi-

[1] Later Biblical Researches, p. 378.

[2] Later Biblical Researches, p. 415.

yam, the hills and ridges within Wady et-Teim disappear; and the whole valley opens out into a wide and tolerably level plain, which thus connects with the basin of the Hûleh. The rapid descent of this part of the valley, and the steps and terraces by which it joins the lower plain, have already been described.[1] It is remarkable that the river Hâsbâny, on issuing from its mountain glen into the great volcanic plain towards the Hûleh, does not follow the lowest part of the plain; but keeps along in its own deep chasm through the western and highest plateau. This chasm the river has worn for itself, to the depth of from two to three hundred feet, in the hard trap rock; it is quite narrow, with very steep and in some places perpendicular banks. Where the river flows through the lower terraces, the chasm is of course less deep. About a mile below Ghŭjar there is a bridge over the stream.[2]

We forded the river above Ghŭjar, near Luweizeh; descending into the chasm steeply and with difficulty, among the trap boulders and globular basalt. Five minutes below the ford is another large fountain, called Luweizâny, bursting forth under isolated strata of limestone rock on the western margin of the stream. Thickets of oleanders and marshy ground render access to the fountain difficult; but it is evidently quite large, and the stream below is very much augmented.[3]

As the Hâsbâny reaches the lower terraces and plains, much water is drawn off from it for the purposes of irrigation.

*Tell el-Kâdy. The Leddân.* About a mile and a half south by east from the southwestern corner of Hermon,

[1] See above, p. 75. [2] Later Biblical Researches, pp. 389, 390.
[3] Later Biblical Researches, p. 389.

nearly in a line with its western base, and about midway of the Hûleh from west to east, rises the isolated Tell el-Kâdy. It stands connected with the step or offset between two plateaus; so that while its height on the northern part is only some thirty or forty feet above the plain, the southern side is twice as high as the northern, rising above the plain at its southern base not less than eighty or ninety feet. The form is oblong, but irregular; stretching from west to east. The top is an area of several acres, somewhat highest towards the east, and in part cultivated. Singularly enough, this Tell and offset are the dividing line between the volcanic and limestone formations. The Tell and all the plain north are volcanic; while all the plain of the Hûleh further south is limestone. Some have held the Tell to have been the crater of an extinct volcano; but geologists do not favor the idea. Nor, if so, is it easy to account for the absence of all volcanic phenomena on the southern and lower quarter. The elevation of this spot above the sea is given at six hundred and forty-seven feet. The Tell was probably the main site of the ancient city Dan.

On approaching Tell el-Kâdy from the west, the first object which strikes the eye is an immense stream of the most limpid water pouring from its western end. This portion of the Tell appears as if built up with large trap boulders; and through these the water gushes out several feet above the base. It forms a little lake at the bottom; and then rushes down a steep channel to the next lower plateau. This is one of the largest fountains in the world; the stream that issues from it being not less than four times as large as the Hâsbâny, even after all the accessions which the latter receives.

Not all the water, however, from the interior of the Tell,

escapes in this way. In the surface of the Tell, directly above the great fountain, is a cavity of some extent, into which the water also rises; and runs off, as a considerable stream, through a break in the edge of the Tell, tumbling down its southwestern side. This stream drives two mills; and furnishes water-power enough for any number. It then goes to join the other river. This of itself would be regarded as quite a large fountain. Just in the break of the Tell stands a noble oak (Sindiân), with its vast boughs spreading widely around, and supplying a grateful shade, under which many travellers have rested.[1]

The water of the Leddân, as it rushes down the various declivities or offsets, is used to drive several mills; and large quantities are taken out on both sides and distributed for irrigation. A small branch or canal, called Bureij, is carried along parallel on the west, which supplies water to the fields, and also gathers up again the superfluous waters, and joins the main stream some distance below.[2]

*Nahr Bâniâs.* In the angle of the mountains, formed by the lofty sides of Hermon on the north, and the lower mountains that skirt the Hûleh on the east, on its own beautiful terrace, is situated the town of Bâniâs. Back of the town, in the very nook of the mountains, bursts forth the great fountain, the most picturesque and celebrated of all the sources of the Jordan. The fountain issues from the lower western end of the thin, sharp ridge cut off by Wady Kŭshâbeh from the flank of Hermon, on which ridge, high up, stands the ancient fortress.[3] The fountain, therefore, is wholly south of that Wady; and has no visible connection whatever with the mountain. The ridge terminates

[1] Later Biblical Researches, pp. 390-392.

[2] Later Biblical Researches, pp. 394, 395.

[3] See above, p. 84.

here in a precipice of limestone rock ; the whole terrace also being of limestone ; but the volcanic rocks begin immediately above. The strata of the precipice are greatly inclined ; and the front would seem to have been, in the course of time, much broken away, probably by earthquakes. The main precipice faces about S. W. by W., and rises from a hundred to a hundred and fifty feet above the water of the fountain. At the base of this there appears to have been anciently a cavern, from which the water probably issued. But in consequence of the breaking away of the rock above, the former front part of the cavern is now filled up with the fallen rocks and stones, which also extend out for some distance before it. Through the bottom of this mass of rocks and fragments the water now gushes forth. Further towards the south also, where apparently there was no cavern, there is the same heaping up of debris along the foot of the precipice ; and through this too, in like manner, the water issues less abundantly, spreading itself perhaps from the cavern.

This spot and cavern were the ancient *Panium*, and here the first Herod erected a temple in honor of Augustus.[1] In the face of the precipice, south of the cavern, and now only just above the debris, are several votive niches, with inscriptions. Others may likewise exist, now covered by the stones.

From beneath and through the mass of rocks and stones, which thus fill up and hide the entrance of the cavern, gushes forth the Nahr Bâniâs, a full and rushing river, twice as large as the stream from the fountain near Hâsbeiya. The water is of the purest and finest quality, limpid, bright, and sparkling. Some of the waters are carried in

[1] Joseph. Antiq., 15. 10. 3.

channels through the village; but the main stream passes down on the north. Gathering to itself the other streams just below, and yet itself distributing its waters over the terrace and portions of the adjacent western plain for the purposes of irrigation, it rushes onward in a ravine of its own, with swift course, towards the southwest, down to the plain below, and so to the lower Hûleh. It is the most beautiful of all the streams of the Jordan.[1]

*Junction of the Streams.* Until the year 1852, it was not known whether the three head streams of the Jordan entered the lake of the Hûleh separately, or formed a junction above the lake. To determine this problem, in May of that year we struck down from Tell el-Kâdy into the Hûleh, on the east of the Leddân. After descending several steps and terraces, through tracts of the richest fertility, well watered by irrigation, but without a trace of marshy land, we came in one hour from the Tell to the Nahr Bâniâs. It was here flowing rapidly in a depressed but open valley. We then rose to a somewhat higher plain on the right; and soon fell in with the Leddân, running, with a swift current, in a deep, narrow channel, fifteen or twenty feet below the level of the plain. It was almost hidden by the canes and bushes that line the banks. Five minutes later, we came to the junction of the two streams, in a broad, open area, where the river spreads itself out. We here forded the Leddân; the water coming nearly up to the horses' bellies. Ten minutes further was the very turbid Bureij, which was easily forded.

At length, about a mile from the former junction, we came upon the Hâsbâny at its junction with the other united streams. This spot is about five miles distant from Tell

[1] Later Biblical Researches, pp. 406, 407.

el-Kâdy; and one third of a mile north of Tell Sheikh Yûsaf, the southernmost Tell in the middle of the plain. From the junction the river passes down on the west side of that Tell; and pursues its course southward through the flat, marshy plain of the lower Hûleh to the lake. Above the junction the streams were all running swiftly in channels fifteen feet or more below the surface of the plain.

The relative size of the three streams we estimated as follows: That from Bâniâs is twice as large as the Hâsbâny; while the Leddân, including its branch, the Bureij, is twice if not three times the size of that from Bâniâs. Below the junction the river is apparently about as large as the Jordan at the bridge below the lake.

In the lower plain, the stream from Bâniâs has the clearest water, being less used for irrigation. The water of the Leddân is of a turbid ash color. That of the Hâsbâny is muddy and of a dark yellow.[1]

The swiftness of the current in all the streams is accounted for by the fact already given, that the descent along the basin of the Hûleh, from the base of Hermon to the lake, is hardly less than six hundred feet; or from fifty to sixty feet in each mile.[2]

*Historical Notices.* The sacred writers of the Bible make no allusion whatever to the sources of the Jordan. Josephus speaks of the *Panium*, the fountain at Bâniâs, as the main source; and several times mentions the stream from Dan (Tell el-Kâdy) as the *Lesser Jordan*.[3]

But neither Josephus, nor any other ancient writer, makes

[1] Later Biblical Researches, pp. 393, 395. [2] See above, p. 75.

[3] *Panium*, Joseph. Antiq., 15. 10. 3. Bel. Jud., 1. 21. 3. *The Lesser Jordan*, ὁ μικρὸς Ἰορδ. Joseph., Bel. Jud., 4. 1. 1. Antiq., 1. 10. 1. Ibid., 5. 3. 1. Ibid., 8. 8. 4.

any allusion whatever to the Hâsbâny, the longest of all the streams. This silence in the case of Josephus might perhaps be referred to a national feeling; inasmuch as the source of this stream lies beyond the limits of Palestine proper, which was reckoned from Dan to Beersheba. But whatever the motive may have been, the like analogy exists at the present day in the case of the other three Syrian rivers, which take their rise in the Bŭkâ'a and Anti-Lebanon,—the Barada, the Lîtâny, and the Orontes. Thus the proper head of the Barada is a lakelet in the plain south of Zebedâny, in the highest part of Anti-Lebanon; while Abulfeda expressly says that "the source of the river of Damascus" is at the great fountain of Fîjeh, half way down the mountain. The Lîtâny has one of its heads in the fine stream of Ba'albek; yet the great fountains near 'Anjar are usually spoken of as its sources. In like manner the large fountain at Lebweh is the true head of the Orontes; yet what are known as the sources of that river are the abundant fountains near Hŭrmul.

The idea which, in all these cases, lies at the foundation, seems to be, to regard as the source of a river, not its re-remotest head, but its most copious fountains.[1]

*From the Hûleh to the Lake of Tiberias.* For the lake of the Hûleh, see below, in Sect. II.

The character of the tract of higher uneven land, which intervenes between the two lakes, has already been described.[1] It is cut through by the deep rocky chasm of the Jordan.

The Jordan, on issuing from the upper lake, flows for a short distance along a narrow cultivated plain; and then enters the volcanic chasm, which leads down to the lower

[1] Later Biblical Researches, pp. 412, 413.

lake; the direct distance between the lakes being about twelve miles. The upper part of this chasm is devoid of trees; and the sides are strewed with black boulders. Thus far the current of the river is swift, but without rapids. Its breadth is from thirty to forty yards. A mile below the lake of the Hûleh there is a substantial bridge across the river. It has four pointed arches, is sixty paces long, and is built of the black volcanic stones of the regions. The bridge is called *Jisr Benât Ya'kôb*, 'Bridge of Jacob's daughters.' The present structure was erected apparently early in the fifteenth century. During the crusades there was here only a ford. But this passage of the Jordan must always have been an important one; and it would seem probable that a bridge must have existed here in ancient times. Hence, perhaps, the adjacent district on the east took the name of *Geshur* (גְּשׁוּר), as if 'Bridge-land'; at any rate *Geshur* and the *Geshurites* were in this vicinity.[1] At the present day, this is the great caravan-route between Damascus and all western Palestine from 'Akka to Gaza.

About two miles below the lake the more rapid descent begins; and the river rushes down its deep and somewhat winding ravine until it meets the level of the lower plain at or above the site of the eastern Bethsaida (Julias), two miles north of the lake of Tiberias. This ravine is described as full of trees and shrubs; among which the plane tree (*platanus*) and oleander are conspicuous. There is no path within the chasm; but the road along the west side leads over the heights above; so that the river is only occasionally seen dashing and foaming along its rocky bed, with much noise. It is described as forming a sheet of foam throughout most of the distance; but there appear to be no

[1] 1 Chron. ii. 23; 2 Sam. iii. 3, xiii. 37; Josh. xii. 5, xiii. 13; Deut. iii. 14.

proper waterfalls. The descent from the upper to the lower lake is about seven hundred and fifty feet.[1]

Below Bethsaida, where the Jordan flows along the western part of the plain el-Batîhah, its channel winds exceedingly; and the stream is fordable in various places. The river is here from sixty to seventy-five feet broad, sluggish and turbid, but not clayey, with low alluvial banks, which are often changed by the washing of the stream. The Jordan enters the lake near the western hills. We visited the spot in 1838. At that time the strong southerly winds had driven up a bank of sand before the mouth, which rose above the water; and being connected with the eastern branch, extended out for fifteen or twenty rods southwest, forming a channel for the river for some distance along the shore on that side.[2]

The story told by some, that the Jordan maintains its course through the middle of the lake without mingling its waters, is naturally nothing more than a fable.[3]

For the lake of Tiberias, see below, in Sect. II.

Middle Jordan. The Jordan issues from the lake of Tiberias at its southwestern extremity, east and south of the mound on which stood the ancient *Tarichaea*. Pococke describes the river as first running south for a furlong, and then west for half a mile. Lynch represents it as flowing west immediately from the lake. West of the mound of Tarichaea the former traveller speaks of a marsh; the latter mentions an inlet or bay setting up north from the Jordan.[4]

[1] See above, p. 77.

[2] Biblical Researches, II. pp. 414, 415 [III. pp. 309, 310]. Pococke, Description of the East, II. i. pp. 72, 73. Schubert, Reise, III. p. 259. Lynch, Official Report, p. 43. Lynch, Narrative, p. 470. Van de Velde, Mem., p. 148.

[3] Biblical Researches, II. p. 414 [III. p. 309], note.

[4] Pococke, Description of the East, II. i. p. 70. Lynch, Official Report, p. 16

This difference might possibly be accounted for by the greater height of the water in the lake, as seen by the later traveller; or, not improbably, some changes may have here taken place during the century intervening between the two writers.

Just below the spot where the river bends south, are the ruins of an ancient bridge of ten arches; now called Jisr es-Semakh, after the village a mile east at the south end of the lake. Near by the bridge is a ford; and there is another just below the village 'Abeidîyeh. The river, in this part and below, is from twenty-five to thirty yards wide, with a swift current and many rapids. Some of these latter are very strong, and have a great descent. There are also several mills, fed by sluices taken out at the rapids. The river everywhere winds exceedingly.[1]

Such was the Jordan as Lynch found it in April, when it was running "with full banks," during the time of early harvest. But when Molyneux passed down in the last days of August, the case was very different. During the first day's journey, they scarcely had sufficient water to swim the little boat for a hundred yards together. In many places the river was split into a number of small streams, and consequently almost without water in any of them. It was also, at this time, full of small weirs or dams, built up temporarily, to turn the water into narrow channels for irrigation. In this upper part of the stream there were hundreds of places where the party might have walked across without wetting their feet, on the large rocks and stones.[2]

and Map. Comp. Molyneux, Journal of Royal Geograph. Soc., XVIII. p. 107. Irby and Mangles, 1847, pp. 90, 91. Seetzen, Reisen, I. pp. 350, 351.

[1] For the many rapids, see Lynch, Official Report, pp. 16, 17, et passim. Lynch, Narrative, p. 173 sq. See Irby and Mangles, pp. 90, 91. Seetzen, Reisen, I. p. 351.

[2] Molyneux, Journal of Royal Geograph. Soc., XVIII. pp. 108, 109, 115.

Five miles below the lake, the river *Yarmûk* or Hieromax, now called the Sheri'at el-Mandhûr, comes in from the east; being here nearly as large as the Jordan itself. About a mile further down is another bridge built of volcanic rocks, of Saracenic construction, and still in use. The architecture is very massive: with one large pointed arch and two smaller ones below, and three small arches above each of the latter. It is called Jisr el-Mejâmi'a, from the neighboring meeting of the waters. The river at this point is not so wide as at the bridge below the Hûleh. Here passes the caravan-route, leading from Beisân to Damascus, through the country east of the lake of Tiberias.[1]

The river continues of the same general character, though with more water and fewer rapids, as far as Sâkût and Wady Mâlih, where the long fertile reach of the upper Ghôr terminates. As seen from a high point southeast from Pella, this upper portion of the Ghôr presents a beautiful prospect; much of it apparently cultivated and yielding rich crops; and the whole enlivened by the very many windings of the Jordan, as it meanders from side to side through the broad valley. Opposite to Beisân is a ford, or rather three fording places, near each other, the southernmost of which we crossed in May, 1852. The river at this ford spreads out wider than usual, being about forty-five yards; the water came up to the middle of the horses' sides. The same morning we had crossed at another ford, not far north of Sâkût; here the stream was divided by a long and narrow island covered with trees and the rankest vegetation; and the water was somewhat less deep. At this point the lower valley of the river was wider than usual, forming a little

[1] Molyneux, Journal of Royal Geograph. Soc., XVIII. p. 112. Lynch, Official Report, p. 20. Seetzen, Reisen, I. p. 351.

alluvial plain on the west of the stream. But in this plain were two former channels of the river, now full of tamarisk trees. In the rainy season the river still sends its waters partly through these old channels; but never overflows the little plain.[1]

Below Wady Mâlih, the Ghôr, as we have seen, is for a time contracted; and the Jordan passes down near the eastern mountain to the lower plain of the Kŭrâwa. Here, over against the mouth of Wady Fâri'a, is another ford; and just above it are the remains of an ancient Roman bridge, Jisr Dûmieh, not over the present course of the river, but spanning an earlier, more eastern channel, now dry. Several of the Roman arches remain. Here of course was once a great route leading over from Nâbulus (and perhaps Jericho) to Gilead and Bashan; as at the present day there is a road by the ford from Nâbulus to es-Salt and Jebel 'Ajlûn.[2]

This middle portion of the Jordan terminates over against the low rocky ridge which extends out from the southeastern extremity of Kŭrn Sŭrtabeh, and contracts the whole valley to its narrowest limits.[3]

Lower Jordan. To one looking up the Ghôr from a point below Kŭrn Sŭrtabeh, or as seen from the brow of the western mountains, the valley opposite the Kŭrn appears higher than further south; as if a low swell extended across it from the ridge at the end of Sŭrtabeh to the base of the eastern mountains. Where the Jordan finds its way through this apparently higher tract, this latter is broken up, on both

[1] Later Biblical Researches, pp. 316, 325, 334.

[2] Lynch, Official Report, p. 28. Lynch, Narrative, p. 249. Van de Velde, Mem., p. 124.

[3] Later Biblical Researches, p. 293.

sides of the stream, into labyrinths of deep ravines with barren chalky sides, forming cones and hills of various shapes, and presenting a most wild and desolate scene. Here would seem to be the great *break-down* in the bed of the Jordan mentioned in this region by Lynch.[1]

The character of the Jordan continues much the same as higher up. The stream winds greatly along its inner valley, fringed usually by a border of trees and verdure. The current is swift, deep, and strong, with fewer broken rapids. But the Ghôr itself has now become an arid desert, except where a few fountains on its borders impart verdure to narrow tracts in their immediate vicinity. There are three or four fords in the river below Kŭrn Sŭrtabeh; but at some seasons, when the river is full, the Arabs are compelled to swim their horses. One of the main fords is at the mouth of Wady Sha'ib or Nimrîn, E. N. E. from Jericho; here more commonly the horses swim across. The ford el-Helu, lower down, which we visited in 1838, is never passed without swimming. The stream was here about forty yards in breadth; the guides supposed it to be ten or twelve feet deep. The current, though still, was very swift and strong; so that the stoutest swimmers were carried down many yards in crossing. The water was of a clayey color, but sweet and pleasant to the taste.[2]

Between these two fords, near the ruined convent of St. John, is the spot where the Latin pilgrims bathe in the Jordan. The bathing-place of the Greek pilgrims, the el-Meshra'a of Lynch, is at some distance further down. Each party

[1] Later Biblical Researches, p. 293. Lynch, Official Report, p. 29. Comp. Anderson's Geological Report, ibid., p. 148.

[2] Biblical Researches, I. pp. 535, 536 [II. pp. 255-257].

claims to bathe at the very spot where our Lord was baptized by John.

The course of the lower Jordan is in general along the eastern portion of the Ghôr. It enters the Dead Sea about three miles below the ford el-Helu. It has there sluggishly expanded to the breadth of eighty yards; with a depth of only three feet.[1]

General Features. — *Valley and Channel.* We have already referred to the inner and lower valley of its own, within which the Jordan flows along the Ghôr. Scientifically the two valleys are spoken of as two terraces; the upper, being the level of the Ghôr, extending back to the mountains on each side; the lower being the level of the deeper valley in which the river flows.[2] The slope or offset between the two terraces, which is sometimes precipitous, and sometimes composed of clayey pyramids or rounded sand-hills, is often referred to as the upper or outer banks of the river, in distinction from the banks of the channel itself.

We have also alluded several times to the narrow line of trees and herbage which in most parts borders the stream along each bank. The breadth of this line of verdure seems to be regulated by the extent to which the stream overflows, or the water penetrates the soil. In some parts the ground along the bank of the channel occupied by this border of vegetation, is two or three feet more depressed than the level of the lower terrace; and in such places the water often rises over it.[3]

The elevation of the outer banks, or upper plain above the lower, varies greatly; in some places being not more than

[1] Lynch, Official Report, p. 31.

[2] Anderson's Geological Report, p. 140. See above, p. 145.

[3] Biblical Researches, I. pp. 535, 536 [I. pp. 255, 256].

forty feet, while in other parts it is not less than one hundred and fifty feet, or even more. This refers of course to the brow of the upper terrace. In like manner the breadth of the lower or inner valley is irregular; it may be said in general to vary from a quarter of a mile or perhaps less in some parts, to half a mile in others.

Along this lower inner valley, the stream pursues its way in mazy windings. But these belong only to the river and not to its inner valley. The latter, as seen from the adjacent mountains, although it deviates much from a direct course, has nothing of a serpentine character. In consequence of the alluvial soil and many short turns, the stream not unfrequently changes its course, cutting for itself a new channel, and forsaking the old one. In the same way islands are formed; of which there is a large number in the river.

Scripture speaks of the thicket of trees and verdure along the river, as the *excellency* or *pride of Jordan*. Allusion is also made to it as the haunt of lions and other wild beasts, by which the country was of old infested.[1]

*Descent and Depression.* We have already seen that the descent of the Jordan in the basin of the Hûleh to the lake is about six hundred feet; and from thence to the lake of Tiberias about seven hundred and fifty feet. Below the latter lake the whole course of the Jordan and Ghôr is depressed several hundred feet below the level of the Mediterranean. The distance between the lake and the Dead Sea is fifty-six and one half geographical miles, or about sixty-five English miles; and the difference in the depression of the two lakes is taken at six hundred and sixty-six feet. This, of course, marks the descent of the Jordan between the two;

[1] Zech. xi. 3. English Version, wrongly, 'swelling of Jordan,' Jer. xii. 5, xlix. 19, l. 44.

amounting to nearest 10.2 feet, in each English mile of its direct course.[1]

We thus have for the whole descent of the Jordan, from the base of Hermon to the Dead Sea, as the result of observations with the barometer, the figures 600+750+666, amounting in all, to 2016 feet. Of this great descent, more than two thirds lies above the lake of Tiberias.

*Overflow of Jordan.* In the English Version it is said that Jordan, in the first month, "overfloweth all his banks all the time of harvest."[2] The first month was Nisan, beginning with the new moon of March or April; and the time of harvest in the Ghôr was and is during April and May; the barley preceding the wheat harvest by two or three weeks.

From this language the reader is naturally led to conclude that the Jordan, like the Nile, overflows its banks at a certain season, covering with its waters all the lower valley, and perhaps portions of the higher plain. Such, however, is not the fact; as appears from the preceding pages. Nor indeed is such the meaning of Scripture. The Hebrew simply declares that during the time of harvest Jordan is "full [or filled] up to all his banks"; that is, the river runs with full banks, or brimful. This is precisely what is seen at the present day. There are in some places depressed spots along the banks, into which the waters rise, and thus overflow; but these are exceptions.

During the rainy season and the time of the melting of the snows upon Hermon, there must of course be vast quantities of water, from that mountain and the surrounding regions, which would naturally find their way to the Jordan and

[1] See above, p. 80.

[2] Josh. iii. 15; 1 Chron. xii. 15; Sirac xxiv. 36.

its lakes. Still we have no account of any sudden or violent rise or inundation of the river; and there are natural circumstances to show that nothing of the kind would ever be likely to occur.

In the first place, the heavy rains of November and December find the earth in a parched and thirsty state; and among the limestone rocks and caverns of Palestine a far greater proportion of the water which falls is absorbed, than is usual in countries where rains are frequent. Of the brooks which in winter flow down the side valleys, many even then do not reach the Jordan; their waters being swallowed up by the thirsty ground.

Again, the waters which actually descend from Hermon, and the hills around the upper Jordan, are received into the basins of the Hûleh and the lake of Tiberias, and are there spread out over a broad surface; so that all overflow and violence is prevented. The stream that issues from the lower lake, can only flow with a regulated current, varying in depth according to the height of water in that lake. Indeed, these lakes may be compared to great regulators, which control the flow of the Jordan, and prevent its violence and inundation. As now the lake of Tiberias reaches its highest level at the close of the rainy season, the Jordan naturally flows with its fullest current, and "with full banks," for some time after that period. As also the rise of the lake naturally varies (like that of the Dead Sea) in different years, so likewise the fulness of the Jordan.[1]

*Loneliness of Jordan.* It is worthy of remark that there has never been a city, town, or village of any note situated on the immediate banks of the Jordan, below the lake of Tiberias. This is true also of the upper Jordan, in respect

[1] Biblical Researches, I. pp. 540–542 [II. pp. 261–264].

to its various channels; excepting, of course, the towns around their fountains. There may have been, and are still, villages near the upper lake; and the shores of the lake of Tiberias were and are skirted with several towns. Among these latter is to be reckoned the northern Bethsaida (Julias), which lay upon a Tell overlooking also the entrance of the Jordan into the lake.

But below the lake of Tiberias, all the cities of the Ghôr, as Bethshean, Phasaëlis, Jericho, and those on the east, are situated, not on the banks of the Jordan, nor near it, but on the higher ground along the base of the mountains on each side. The only exception perhaps was Succoth (now Sâkût), which stood upon a projecting bluff of the upper terrace, overlooking the lower valley. At the present day there are three miserable villages near the stream, between the lake and the entrance of the Hieromax; and that is all. From that point to the Dead Sea, the Jordan is utterly lonely.

In like manner, it does not appear that a boat ever floated on the waters of the Jordan until the present century. Navigation of course was impossible from the strong current and violent rapids. But even for the passage of the river, boats do not seem to have been in use; the stream was everywhere forded. The English Version once mentions a 'ferry-boat;' but this was evidently nothing more than a raft "to carry over the king's household;" and was not used by the king himself, nor by his attendants.[1]

Nor does it appear that this river has ever been frequented as a place of fishing. Molyneux remarks, that "the muddy Jordan is, throughout, full of small fish;" but they are apparently too small to be worth taking for food.[2] The

[1] 2 Sam. xix. 18 [19].

[2] Journal of Royal Geograph. Soc., XVIII. p. 115.

lake of Tiberias is celebrated in the New Testament and at the present day for its numerous and fine fish of various kinds; but none of these apparently pass out of the lake and down the rapids of the Jordan.

*Jordan as a Boundary, etc.* The Jordan, winding through its great depressed plain, formed naturally not only the dividing line between Palestine on the west and the country on the east; but presented also serious difficulties to those who would pass from one hill-country to the other. The traveller, for example, who would journey from Jerusalem to Heshbon, had first to descend nearly four thousand feet, then cross a rapid river, through which his animals must swim; and again ascend to an equal elevation. However difficult the descent and ascent, the main point always spoken of in Scripture, is the passage of the Jordan.

The earliest mention of Jordan in Scripture has reference only to the fertility of its plain or circuit (כִּכַּר), before the destruction of Sodom and Gomorrah. For this reason it was chosen by Lot on his separation from Abraham. The plain thus chosen was situated in, or at least included, the tract then on the south of the Dead Sea, and now covered by the shallow southern bay of that sea; for it is expressly said to lie "as thou comest unto Zoar."[1]

The river being the dividing line, the phrase 'beyond Jordan' is more commonly used to denote the country on the east, as distinguished from the 'land of Canaan' in the west.[2] This is the prevailing usage; inasmuch as the sacred writers lived, for the most part, in the west.[3] Yet in several

[1] Gen. xiii. 10, 11. See above, p. 80.

[2] Num. xxxv. 14. In this passage, and some others, the English Version wrongly has 'on this side,' instead of 'beyond.'

[3] Gen. l. 10, 11; Josh. ix. 10, xiv. 3, xvii. 5; Judg. v. 17, and often; Matth. iv. 25; Mark iii. 8; John i. 28, x. 40, al.

instances, where the writer or speaker was on the east of the river, the phrase 'beyond Jordan' marks western Palestine; the word 'west' or 'westward' being sometimes appended.[1]

The earliest recorded passage of the Jordan is that of Jacob: "With my staff I passed over this Jordan; and now I am become two bands;" but when or where he again forded the river, with his two bands, to reach Shalem and Shechem, is not said.[2] The next was the miraculous passage of the Hebrew host under Joshua, over against Jericho, when "Jordan was driven back," after their long encampment in the wastes of Moab in the Ghôr.[3] It was at the fords of Jordan that Jephthah slew the Ephraimites, who could not pronounce the *Shibboleth*.[4] David with his army passed over Jordan, probably in the north, to march against the Syrians to Helam.[5] Later also, fleeing before Absalom, David crossed the river, apparently from Jericho, on his way to Mahanaim; and again returned, when Judah came down to Gilgal to meet him. At this time a raft was used to carry over the king's household.[6] In the same quarter, too, Elijah and Elisha smote the waters with the mantle of the former, so that the flood parted, and they went over on dry ground.[7] Naaman, returning from Samaria to Damascus, bathed in the Jordan at one of the upper fords; and the Syrians, fleeing panic-stricken from the same city, must have passed the river in the same vicinity.[8] Judas Maccabaeus and his hosts returning from Gilead, crossed to Bethshean; but it was apparently opposite Jericho that Jonathan and his fol-

[1] Deut. iii. 20, 25, xi. 30; Josh. v. 1, xii. 7, etc.

[2] Gen. xxxii. 10, xxxiii. 18.

[3] Josh. iii. 1–17; Ps. cxiv. 3.

[4] Judg. xii. 5, 6.

[5] 2 Sam. x. 17.

[6] 2 Sam. xvii. 22; comp. 16. 2 Sam. xix. 15, 18 [19]. See above, p. 165.

[7] 2 Kings ii. 8, 14; comp. 4.

[8] 2 Kings v. 14; comp. 3. 2 Kings vii. 15.

lowers swam through the river, to place themselves in safety from Bacchides.[1]

John the Baptist, whose early life had been passed in the desert of Judah, on the west of the Dead Sea, came first baptizing in Jordan; and there "went out to him Jerusalem and all Judea and all the region round about Jordan." Here Jesus also came to be baptized of John; and then went up into the adjacent desert to be tempted.[2] These circumstances, the neighboring desert, and the mention of crowds only from Jerusalem and Judea, serve to show that the place of baptism was probably at one of the lower fords, near Jericho. According to the common (and perhaps best) reading, John's headquarters were at Bethabara (house of the ford) beyond Jordan. The place had its name doubtless from the vicinity of the ford; and is not improbably the same with the *Beth-barah* of the Old Testament.[3]

Twice afterwards our Lord passed over into the country east of Jordan. Once, to escape the plots of the Jews, he withdrew to the place where John at first baptized; whence he was recalled by the death of Lazarus.[4] Retiring for a time to Ephraim on the border of the desert, he seems from thence to have crossed the Jordan, and having passed down through Perea, he recrossed the river near Jericho, and so made his way to Jerusalem.[5]

*Explorations of the Jordan.* It has been said above, that,

[1] 1 Macc. v. 52. Joseph. Antiq., 12. 8. 5. 1 Macc. ix. 48. Joseph. Antiq., 13. 1. 3.

[2] Luke i. 80, iii. 21; Matth. iii. 5, 6; Mark i. 5; Matth. iii. 13–16, iv. 1; Luke iv. 1.

[3] John i. 28, x. 40; Judg. vii. 24.

[4] John x. 39, 40, xi. 3, 16, 17.

[5] John xi. 54; Mark x. 1, 46; Luke xix. 1, 28. See also the author's Harmony of the Gospels in Greek, pp. 200–204.

so far as is known, no boat appears to have ever floated on the Jordan until the present century.[1] But, as if to mark the modern spirit of progress, during the second quarter of this century boats passed down the Jordan no less than three times, from the lake of Tiberias to the Dead Sea.

I. *Costigan.* In July, 1835, Mr. Costigan, an Irish traveller, contrived to have a small boat carried over, on camels, from the coast to the lake of Tiberias; and thence followed the Jordan with it down to the Dead Sea. Here he launched forth alone with his Maltese servant upon these waters; and succeeded in reaching the southern extremity. By some mismanagement they were left for two or three days without fresh water, exposed to the fierce rays of the burning sun; and were compelled to row hard to get back to the northern end. On reaching the shore they lay for a whole day too weak to move, and trying to regain strength by laving each other with the heavy waters of the lake. At length the servant made shift to crawl to Jericho, whither Costigan was also brought, and was, as soon as possible, conveyed to Jerusalem, under the excitement of high intermittent fever. He died, two days afterwards, in the Latin convent; and lies buried in its cemetery. No notes, nor any account of his voyage, were found among his papers. The enterprise was wholly without fruit in respect to both the Jordan and the Dead Sea.[2]

II. *Molyneux.* In the latter part of August, 1847, Lieut. Molyneux, of the British ship of war Spartan, succeeded in transporting the smallest boat of the ship, on camels, from 'Akka to Tiberias. Accompanied by three English sailors and several Arab servants, he proceeded down the Jordan

[1] See above, p. 165.

[2] See Biblical Researches, I. pp. 229, 230 [I. p. 339].

with the boat; having also a land party with the baggage on camels and mules. The water was low, and the passage of the boat, for the first days, difficult. On the sixth day, not far from the mouth of the Zerka, while Lieut. M. was with the land party, the boat was attacked and plundered by a large body of Arabs, and the three English sailors put on shore, to find their way back to Tiberias; which they did. Two Arab servants were permitted to go on with the boat; which they brought safely to the ford opposite Jericho. Lieut. M. embarked on the Dead Sea, with only Arab assistants; proceeded as far south as to the neighborhood of the peninsula; took three deep soundings (225, 178, 183 fathoms); and returned. He left the entrance of the Jordan Aug. 24; and reached the northern shore of the sea, on his return, Sept. 5. He was able to take back the boat on camels, by way of Jerusalem, to the ship, then at Yâfa. But the anxiety and excessive fatigue to which he had been exposed in the "misty oven" (as he calls it) of the Ghôr and Dead Sea, had worn him out; and he died soon after his return to his ship, from the combined effects of climate and over-exertion.

A brief journal of the voyage, drawn up by Lieut. M. himself, was published, in 1848, in the Journal of the Royal Geographical Society.[1]

III. *Lynch.* On the 10th of April, 1848, a well-appointed expedition from the United States, under the authority of the government, embarked in two metallic boats upon the lake of Tiberias, and entered the Jordan; having also a land party on camels and horses. This expedition consisted of Lieut. Lynch as commander, Lieut. Dale as second in command, Midshipman Aulick, a botanist, and ten chosen sea-

[1] Vol. XVIII. pp. 104–130; comp. ibid., p. xxxvi.

men. They were accompanied by Dr. H. J. Anderson as geologist, and Mr. Bedlow, a traveller. The season of the year was favorable; the Jordan then usually having the most water. They experienced great difficulties in the descent of the river, from rocks and strong rapids. They reached the Dead Sea in eight and a half days, on the 18th of April. Their examination of that sea will be noticed further on, in connection with our account of those waters. A level was afterwards run from the Dead Sea by Jerusalem to the Mediterranean at Yâfa, according to the suggestions of the author of this work. The party proceeded by way of Tiberias, Mount Hermon, and Damascus, to Beirût. Several were already ill from exhaustion and exposure; but all recovered except Lieut. Dale, who died of fever in the house of Rev. Eli Smith at Bhamdûn. His grave is in the American cemetery at Beirût.

Two works embracing the journals and results of this expedition have been published by Lieut. Lynch. The first appeared late in 1849, entitled *Narrative of the United States Expedition to the River Jordan and the Dead Sea.* The second was not published until 1852, with the title, *Official Report of the United States Expedition to explore the Dead Sea and the River Jordan.* This latter volume contains the scientific reports; including the very important geological report of Dr. H. J. Anderson.

### II. THE JORDAN: TRIBUTARIES FROM THE EAST.

From the east, the Jordan receives its largest and most important tributaries.

*Wady Za'âreh.* The fine brook which flows down this valley to Bâniâs is understood not to be perennial; and has already been sufficiently described.[1]

[1] See above, p. 84.

Before turning to the next stream, the Hieromax, it may be remarked, that some of the head branches of the A'waj (*Pharpar*), which flows towards Damascus, lie within the northern border of Palestine proper. On the great road leading northeast from the bridge over the Jordan to Damascus by el-Kuneitirah and Sa'sa', the country between these two places slopes towards the east and north. At an hour or more from el-Kuneitirah, the way crosses a Wady with a stream, having two bridges on the ancient road, still passable, over the two branches or channels of the rivulet. An hour before Sa'sa', the stream Mughannîyeh in like manner crosses the road; and also has a bridge. On earlier maps, all these streams are made to run south to the Hieromax. The latest map, however, represents them as flowing together on the right of the road, and forming one stream, which, coming from the south, joins the other branches of the A'waj at Sa'sa'. This is more in accordance with the slope of the land, and the testimony of travellers.[1]

*The Yarmûk* or *Hieromax.* No perennial stream flows to the upper Jordan or the lake of Tiberias from the east. The first and largest tributary on that side, the Hieromax, enters the Jordan about five miles below the lake.

There is no allusion to this river in Scripture or in Josephus; but its Hebrew name, *Jarmuk* (יַרְמוּךְ), occurs several times in the Talmudists.[2] From this name the Greek form (Ἱερόμαξ) is an obvious corruption, having the corresponding consonants. It is not found, however, in Greek writers;

[1] Wetzstein's Map, by Kiepert, in Zeitschr. für Erdk., Aug. 1859. W. M. Thomson, in Bibliotheca Sacra, 1849, p. 367. Comp. Burckhardt, Syria, p. 313. Porter's Handbook, p. 465. Van de Velde's Map merely copies that of Berghaus, in 1835.

[2] Lightfoot, Opera, fol. II. pp. 172, 173.

and the Latin *Hieromax* appears to be only once read in Pliny.[1] Arab writers have the name Yarmûk ; but the common appellation is now the Sheri'at el-Mandhûr, from a tribe of Arabs who pitch their tents along its lower course ; and in order to distinguish it from the Sheri'at el-Kebîr or Jordan.

The remote sources of the Yarmûk are the Wadys, or winter-torrents, which descend from the western slopes of Jebel Haurân. These Wadys are numerous, and many of them run together in the great plain ; but their course and number have been as yet very imperfectly explored. Among these doubtless is the brook by Raphon.[2] Still some of the more important ones have been pointed out ; all running with deep channels through the wide plain.

The northernmost is Wady Kŭnawât. It has its beginning near the city of that name, and sweeps along northwest on the border of the Lejah, and south of Nejrân, to Edhra', the ancient *Edrei*. There turning southwest to Eshmiskîn, it receives Wady Hŭreir, coming from the swampy ground near Tell Dilly on the Haj route, between es-Sŭnamein and Eshmiskîn. In winter and spring the district around Tell Dilly is a deep bog or swamp ; the proper source of the stream is two hours west, at Tell Serrâya.[3] The Wady Kŭnawât continues the same course to el-Mezârîb. Another valley, Wady el-Ghâr, also begins near Kŭnawât, and runs west directly through the plain to Wady Kŭnawât, between Eshmiskîn and Mezârîb. The Wady ed-Dân is made up of two branches ; one coming from the neighborhood of Suweideh, and the other from beyond 'Ary. The

[1] "Gadara, Hieromace praefluente," Plin. Hist. Nat., V. 16. v. 18.

[2] 1 Macc. v. 37, 39, 40, 42. See above, p. 86.

[3] Burckhardt, p. 656.

united Wady goes to the Kŭnawât, near Mezârîb; and then the valley below the junction takes the name of Wady 'Aweirid. The southernmost branch, Wady Zeidy, begins in the mountains east and north of Kureiyeh, and passes down on the north of Busrah (*Bozrah*); while another valley, Wady el-'Akib, has its rise near Sulkhad, and, sweeping round far to the south of Busrah, joins the Zeidy further west. The latter then runs with a winding course by Der'a, and unites with Wady Aweirid. The joint stream now flows westward, and becomes the Yarmûk.[1]

Several lesser streams or Wadys are named as running to the Yarmûk, from the north, chiefly from Jaulân. Wady 'Allân, a permanent stream, unites near Tesîl with the Rukâd, not permanent, coming from Tell Shak-hab in Jeidûr. Next west is Wady Hâmy Sŭkker, which has a great fall, and runs through a deep chasm of precipitous rocks. Then Wady Sîdeh; and lastly Wady Mu'akkar, coming from the southern parts of Jebel Heish.[2]

In summer the waters from the mountain dry up in the plain; and then the stream of the Yarmûk is wholly supplied from the fountains at Mezârîb, the marshy tract near Dilly, and the 'Allân and perhaps one or two other permanent sources in Jaulân. At Mezârîb are a number of fountains; the waters of which flow together and form a pond or lake nearly half an hour in circumference, with an island in the middle. The water, as it issues from the springs, is slightly tepid; in the lake it is as clear as crystal. The lake is deeper than a man's height, and full of fish. The lake and springs are known also as el-Bujjeh.[3]

[1] Porter, Five Years in Damascus, II. p. 212 and Map. Burckhardt, Syria, p. 273. Wetzstein in Zeitschr. für Erdk., Aug. 1859, p. 150, and Map.

[2] Burckhardt, Syria, pp. 282, 284, 273. Seetzen, Reisen, I. pp. 352, 353.

[3] Porter's Handbook, p. 321. Burckhardt, Syria, p. 241.

In its western part, the Yarmûk flows through a deep and wild ravine, the sides of which are rugged cliffs of basalt, in some places more than one hundred feet high. The banks along the deep valley are cultivated by the Arabs Menâdhereh (sing. Mandhûr), who dwell in tents. Further down, the Wady becomes so narrow as to leave no space between the stream and the precipices on each side.

North of Um Keis, the ancient *Gadara*, which lies on the summit of the mountain ridge between the Yarmûk on the north and the Wady el-'Arab in the south, in the deep chasm of the river, and an hour distant from Um Keis, are the warm springs of Gadara or Amatha (Heb. *Hammath*, warm springs), mentioned by Eusebius and Jerome, and by other early writers.[1] They rise up in the bottom of the chasm, between the stream and the northern precipice. Three principal fountains are spoken of at intervals of an hour between; one N. N. E. of Um Keis, one north, and the third N. N. W. from the same place. There is also a fourth fountain on the south side of the stream. The westernmost spring is the hottest of all, being 43° C. or 109° F. The hand cannot be held in it for any length of time. The water emits a strong smell of sulphur; and deposits a yellow sulphurous crust upon the stones. The spring bubbles up in a basin some forty feet in circumference and five feet deep, surrounded by a dilapidated wall. The water is so clear, that minute objects at the bottom of the basin can be distinctly seen. Near by are the remains of an ancient building for baths. In the last days of May, 1858, Roth found here three hundred people, many of them families, who had come to use the waters; most of them Christians from the region west of the lake. They were living in booths. The upper spring,

[1] Onomast., Articles *Æmath*, *Gadara*. Reland, Palaestina, p. 775.

in like manner, bubbles up in a similar basin; its temperature is only 34° C. or 93° F., and the odor of sulphur is less strong. Copious streams flow from all the fountains to the river; which thus receives large accessions to its volume of water. The Arabs reckon ten springs in all.[1]

An hour below the fountains, the Yarmûk issues from the mountains upon the Ghôr; and after another hour receives the Wady el-'Arab. The river in the mountains runs with great swiftness along its rocky chasm; in the Ghôr it has its own lower valley, like the Jordan; and is everywhere thickly skirted with oleanders. The stream is here about forty yards wide; and in the spring of the year is four or five feet deep. It enters the Jordan five miles below the lake of Tiberias; and has there nearly as much water as the Jordan. Not far above the junction is a bridge over the Yarmûk, built of volcanic stone, with five arches. It belongs to the same great road, which coming from Beisân crosses the Jisr-el-Mejâmi'a, and leads to Damascus through the region east of the lake.[2]

*The Jabbok.* The next permanent tributary of the Jordan on this side is the *brook* (נַחַל) *Jabbok* of Scripture, once called 'the river of *Gad*,'[3] now the Nahr ez-Zerka, which enters the Jordan nearly opposite Nâbulus, and about half way between the two lower lakes. It has its remotest sources on the plateau east of the mountains; and breaks down through the latter by a deep and sometimes wild chasm, bordered on each side by the loftiest heights of Jebel 'Ajlûn and

[1] Seetzen, Reisen, I. p. 369. Burckhardt, pp. 276, 277. Irby and Mangles, p. 90. Buckingham, Palestine, pp. 442–444. Roth, in Petermann's Geograph. Mittheil., 1859, p. 284.

[2] Seetzen, Reisen, p. 351. Burckhardt, Syria, pp. 273, 274. Lynch, Official Report, p. 20. Roth, in Petermann's Geograph. Mittheil., 1859, p. 283.

[3] Gen. xxxii. 22, 23; 2 Sam. xxiv. 5.

the Belka. The source mostly spoken of, is at the ruins of 'Ammân (*Rabbath-ammon*); from whence the valley is said to sweep off northeastward by 'Ain Ghazâleh to Kŭl'at ez-Zerka, a castle four hours distant from 'Ammân, on the Haj route. Here in winter is a considerable stream, gathered mainly from the north and east. Turning here northwest and then west it passes down through the great notch of the mountains, receiving the stream coming from Jerash, an hour north; and, according to Seetzen, no less than nine other minor streams. In winter the river is often swollen and impassable; its immediate bed through the mountains is a deep, narrow, and sometimes wild ravine. In summer, the upper branches become dry; and the stream then dwindles to a small and shallow river. The channel is everywhere bordered with canes and oleanders. The Zerka issues from the mountains an hour south of Abu 'Obeida; and Burckhardt speaks of a smaller northern branch a quarter of an hour only from that place; perhaps originally nothing more than a mill-race, for which it is still used. The main stream, according to the same writer, enters the Jordan about an hour and a half southwest of the spot where it issues from the mountain. This is doubtless a correct account; as Burckhardt had the stream in view for several hours. In the Ghôr it has its own lower valley, like the Jordan, with white, chalky-looking cliffs on each side.[1]

The earliest mention of this river in Scripture, is where Jacob with his whole family "passed over the ford Jabbok," on his way back from Syria, and then wrestled all night

[1] Burckhardt, Syria, pp. 347, 358, 657. Seetzen, Reisen, I. pp. 392, 393. Lord Lindsay, pp. 278-280, 287. Molyneux, in Journal of Royal Geograph. Soc., XVIII. p. 119.

with the angel. The next day he met his brother Esau.[1] The Jabbok was the northern border of the children of Ammon, and afterwards of Sihon king of the Amorites.[2] Moses passed over the Jabbok to subdue Og king of Bashan; and the river was the boundary between northern and southern Gilead, as also between Manasseh on the north and Reuben and Gad on the south.[3]

*Other Wadys.* The courses of Wady Sha'ib and Wady Hesbân have already been described. It is uncertain whether they may not have small perennial streams.[4]

Streams flowing to the Dead Sea. These are strictly not tributaries of the Jordan, but they run to the Ghôr, and mingle their waters with those of Jordan in the Dead Sea.

*The Zerka Ma'în.* This stream is not mentioned in Scripture. It collects its waters from several branches on the high plain of the Belka, and passes down along the northern end of Jebel 'Attârûs, by a narrow and precipitous chasm, to the Dead Sea. One source is near Ma'în, the ancient *Baal-Meon*, which thus gives name to the stream. Its course from Ma'în is about southwest for two hours, and then west. The Wady is here deep, but an ancient highway from Ma'în crosses it, and passes down on its left side. At four hours from Ma'în, and below the end of Jebel Attârûs (on which are the ruins of the ancient fortress Machærus), the way becomes impassable for horses, terminating at what seems a precipice. A narrow zigzag path leads down to the celebrated hot springs. These are about two hours distant from the Dead Sea. The valley is very narrow, and on both sides

[1] Gen. xxxii. 22–28, xxxiii. 1–20.

[2] Josh. xii. 2; Deut. iii. 16; Num. xxi. 24; Judg. xi. 13, 22. Joseph. Antiq., 4. 5. 2, 3.

[3] Deut. iii. 1, 2. Joseph. Antiq., 4. 5, 3.

[4] See above, p. 87.

are high, rocky cliffs. The stream enters the Dead Sea through a chasm of sandstone, and has before its mouth a low point or delta. The chasm is one hundred and twenty feet wide, with perpendicular walls of red and yellow sandstone, at first eighty feet high, but rising further back to one hundred and fifty feet. The stream is a copious brook, twelve feet across by ten inches deep, and descends along the chasm with great velocity, and with several cascades. The water is turbid, with a temperature of 94° F.[1]

The hot springs above in the valley are the *Callirrhoë* of ancient writers, to which the first Herod repaired during his last illness, without benefit.[2] They have been visited in modern times only by Seetzen and the party of Irby and Mangles.[3] On the north side of the wild and narrow chasm no less than four principal springs burst forth in a distance of half a mile, with many smaller ones. In one place a considerable stream of hot water falls over a high, perpendicular rock, the sides of which are colored of a brilliant yellow, from the deposit of sulphur. At the bottom of the chasm rushes down what may be termed a hot river. The water is quite hot, but not boiling; the hand cannot be held in it for half a minute. Seetzen compares the temperature with that of the hot baths near Tiberias, which is 144° F.[4] It is here probably somewhat higher. The chasm is filled with steam, which in this confined spot combines with the burning rays of the sun to produce an insufferable heat. The water de-

[1] Seetzen, Reisen, I. p. 408, II. pp. 330, 333, 336, 370. Burckhardt, Syria, p. 369. Irby and Mangles, 1847, pp. 143, 144. Lynch, Narrative, p. 370

[2] Joseph. Antiq., 17. 6. 5. Bel. Jud., 1. 33. 5. Ibid., 7. 6. 2, 3. Plin. Hist. Nat., 5. 15. v. 16. Onomast., Article *Beelmeon*.

[3] Seetzen, Reisen, II. pp. 336, 337. Irby and Mangles, 1847, pp. 144, 145. Legh, in American Biblical Repository, 1833, p. 648.

[4] Biblical Researches, II. p. 384 [III. p. 259].

posits sulphur, but is itself tasteless. The bottom is filled with a thicket of canes, aspines, and wild palms, which spring out of the crevices of the rocks. The ancient name *Callirrhoë* refers rather to the springs, and not to the place. Indeed, there could have been here no permanent town; nothing more, probably, than booths or temporary dwellings for those who used the waters. The whole surface of the shelf where the springs are, is strewed over with tiles and broken pottery, and four Roman medals of copper were also found. Josephus speaks of the *place* (τύπος), not the fountains, as called *Baaras*, which Eusebius and Jerome also name, writing it *Baris* or *Baru*.[1]

Seetzen relates, that half an hour south of the mouth of the Zerka Ma'în, another large brook of hot water enters the Dead Sea, coming from a second cluster of hot springs not far above.[2]

*The Arnon.* This river, so often mentioned in Scripture as a *Nahal* (נַחַל), is now called el-Môjib, and is made up of two main branches, — one, the largest, being the Môjib itself, and the other, on the north, called el-Wâleh.

The Wâleh rises in the eastern part of the Belka, and passes on the north of Dibon. It has a little more water in this part than the Zerka Ma'în, and runs in a rocky bed at the bottom of a deep ravine, the brook being overgrown with willows, oleanders, and tamarisks. The Wâleh glides down the mountain side in just such a deep bed of basaltic rock, and unites with the Môjib at the distance of about two hours above the shore of the Dead Sea.[3]

[1] Joseph. Bel. Jud., 7. 6. 3. Onomast., Articles, *Beelmeon, Cariathaim.* Irby and Mangles, 1817, p. 144.

[2] Seetzen, Reisen, II. pp. 368-370.

[3] Seetzen, Reisen, I. p. 409, II. pp. 342, 343. Burckhardt, Syria, pp. 370, 371.

The Môjib itself has its principal source near Kŭl'at el-Kŭtrâneh, a station on the Haj route; it has in this upper part, where it flows northwest, several names, and takes that of el Môjib about an hour above the bridge Aroer. There it receives another head branch from the northeast, which, rising not far from the Haj route, at first is called el-Lejûm; but after receiving two or three brooks, takes the name of Enkheileh, and flows in a deep bed. This last name suggests the ancient *Nahaliel*, the second station of the Hebrews in this region after quitting the desert.[1] Near the confluence of the two streams forming the Môjib, is a tract of pasture ground in the valley, having in the middle of it a hill with ruins upon it; near the stream are several wind-mills. The common road from Hesbân to Kerak crosses the Arnon and its valley near the remains of Aroer. There is here a comparatively modern bridge in ruins, and a wind-mill.

The view of the Môjib and its chasm at this point is very striking. The river flows at the bottom along a narrow strip of verdant, level ground, about forty yards across. From this the steep and barren banks rise up to a great height, covered with immense blocks of stone, which have rolled down from the upper strata. Hence, when viewed from above, the valley looks like a deep chasm formed by some tremendous convulsion of the earth, into which there seems no possibility of descending to the bottom. The river flows in a rocky bed, and, when Burckhardt saw it in July, was almost dried up; but the bed bore evident marks of its impetuosity in the rainy season. The valley has few oleanders or other shrubs.[2]

[1] Num. xxi. 19.

[2] Burckhardt, Syria, pp. 372, 373. Comp. Seetzen, Reisen, I. pp. 410, 413. Irby and Mangles, p. 142.

The chasm of the river as it passes down the mountain side is less deep, but rocky and wild. Seetzen in January found the stream here only a few paces wide; but it flowed with great velocity, roaring and foaming over the rocks in many places.[1]

The Môjib enters the Dead Sea through a chasm similar to that of the Zerka Ma'în, having before it a low delta, across which the stream flows. The chasm is nearest a hundred feet in width, formed by high, perpendicular cliffs of red, brown, and yellow sandstone, all worn by the water into fantastic forms, like Egyptian architecture. The chasm runs up in a direct line for one hundred and fifty feet, and then turns slowly, with graceful curves, to the southeast. Seetzen waded through the stream late in January, and gives it at forty feet wide, and only knee-deep. Lynch early in May found the stream eighty feet wide, and four feet deep. The chasm is a striking object, as seen from 'Ain Jidy on the opposite shore.[2]

In Scripture *the Arnon* marks the boundary between Moab and the Amorites; as at the present day it divides the district of Kerak from the Belka.[3] It became, of course, the southern border of the tribes of Reuben and towards Moab;[4] and at the same time the southern border of Palestine on this side. Hence, as in the west the land of Israel extended "from Dan to Beersheba;" so, on the east, it was said to reach "from the river Arnon unto mount Hermon."[5]

*Wady Kerak* or *W. Dera'ah*. Both these names would

[1] Seetzen, Reisen, II. pp. 346, 347.

[2] Seetzen, Reisen, II. pp. 364, 366. Lynch, Narrative, pp. 367, 368. Biblical Researches, I. p. 502 [II. p. 206].

[3] Num. xxi. 13, 15, 26; Josh. xii. 2; Judg. xi. 22. Seetzen, Reisen, II. p. 348.

[4] Deut. iii. 16; Judg. xi. 13, 26.

[5] Josh. xii. 1; Deut. iii. 8, iv. 48.

be common on the eastern side of the Dead Sea; on the western, we heard only the former. Burckhardt has both. The Wady has its beginnings in the deep ravines immediately around the cliff on which Kerak stands; and runs down in a winding course about W. N. W. to the isthmus of the peninsula in the Dead Sea. The stream flows upon the isthmus to the northern bay. In January, Seetzen found in it more water than in the Arnon; early in June, Irby and Mangles speak of it as a considerable brook; but the people of Kerak told Lynch that water flows in it only in the rainy season. The valley is, in many places, a deep and wild chasm; and is distinctly traceable from the opposite coast. The usual path between Kerak and the peninsula passes along above the cliffs on its southern side. There is no allusion to this valley in Scripture.[1]

*Wady el-Ahsy* or *W. el-Kŭrâhy.* This Wady has its beginning east of the Kŭl'at el-Ahsy, or el-Hassa, on the Haj route. It is there dry in summer, but there are fountains not far west of the castle. Like the streams further north, it breaks down by a deep chasm through the high table-land, and descends by a deep gorge through the mountain to the Ghôr just south of the Dead Sea. In a side ravine, just above the point where the road from Kerak to Tŭfîleh crosses, is a hot spring. The stream, in the lower part, is permanent. In the Ghôr it takes the name of Wady el-Kŭrâhy; and runs to the southeast corner of the Dead Sea as a small river, fertilizing the adjacent tract.[2]

[1] Biblical Researches, I. p. 519 [II. p. 231]. Burckhardt, Syria, p. 390. Seetzen, Reisen, I. p. 417, II. p. 350. Irby and Mangles, pp. 109, 137, 138. Lynch, Narrative, p. 354.

[2] Biblical Researches, II. pp. 112, 157 [II. pp. 488, 555]. Burckhardt, Syria, pp. 400, 401, 658. Seetzen, Reisen, I. pp. 417, 427. Irby and Mangles, pp. 108, 114, 137.

Wady el-Ahsy forms the natural boundary between the district of Kerak or ancient *Moab* on the north, and the district Jebâl or ancient *Gebal*, *Gebalene*, or *Edom*, on the south.[1] The mountains of Moab are high, and terminate here in a conspicuous bluff; those on the south are for a time lower. In all probability, therefore, this Wady is the *Nahal* or *brook Zered* of Scripture, over which the Hebrews went in order to enter the land of Moab from the south. They doubtless crossed, as in the case of the Arnon, somewhere in its upper part, where it would present no difficulty.[2]

### III. THE JORDAN: TRIBUTARIES FROM THE WEST.

The streams which enter the Jordan from the west, are fewer and much smaller than those coming from the east.

*The Derdârah.* This stream drains the region of Merj 'Ayûn, a fine oval basin surrounded by ridges of higher ground; by which it is separated from Wady et-Teim in the east, and from the chasm of the Lîtâny on the west. The main source is in the northern part, where large fountains break forth under a bank; and in front of these are the remains of a thick wall or dam, intended to raise the water to a sufficient height for mills or for extensive irrigation. The stream is carried through the middle of the plain, sometimes in artificial channels; and afterward breaks down as a considerable brook, by a deep ravine, through the high ground in the southeast of the Merj. It is understood to run to the Hâsbâny, before the junction of the latter with the other streams; but has not always water in the lower part of its course.[3]

[1] Burckhardt, Syria, p. 401. Seetzen, Reisen, I. p. 427.

[2] Deut. ii. 13, 14; comp. v. 18; Num. xxi. 12. Biblical Researches, II. p. 157 [III. p. 555].

[3] Later Biblical Researches, pp. 372, 374, 395.

Besides two or three fine brooks of the rainy season and spring, as in the Wadys Hendaj, Rŭbŭdîyeh, and el-Bîreh, we meet with no stream from the west until we reach the valley of Jezreel. This valley, as such, has already been described.[1]

*Nahr el-Jâlûd.* This stream, which flows down through the great valley of Jezreel, has its highest source in the 'Ain el-Meiyiteh or Dead fountain, which springs up at the foot of the rocky wall just under the village of Zer'în (*Jezreel*). But the main source is the great fountain 'Ain Jâlûd, twenty minutes further down the valley, flowing out from under a sort of cavern in the wall of conglomerate rock, which here forms the northern base of Gilboa. The water is excellent; and spreads out at once into a fine limpid pool, forty or fifty feet in diameter, with multitudes of small fish in it. From this reservoir a copious mill-stream flows off eastward down the valley. There is every reason to regard this as the ancient 'fountain by Jezreel,' where Saul and Jonathan pitched before their last fatal battle. It is also the *fons Tubania* of the crusaders.[2]

Lower down, the brook flows along the northern part of the plain or valley; and receives another mill-stream coming from the southwest, from near the base of the mountain. But the water is mainly taken out by several canals for irrigation, leaving the bed of the brook a mere ditch of mud and water. We crossed it as such in 1852.[3] It receives further supplies from various small fountains; and likewise from the marsh which exists on the southwest of Beisân.

At the site of ancient Beth-shean or Scythopolis, north of

[1] See above, pp. 91, 92.

[2] 1 Sam. xxix. 1. Will. Tyr., 22, 26. Biblical Researches, II. p. 323 [III. p. 168].

[3] Later Biblical Researches, p. 338.

the present village, the Jâlûd flows along, as a considerable stream of brackish water, between the northern wall of the valley and the dark Tell on which stood the ancient citadel of the place; and breaks down by a ravine to the Ghôr, where it runs to the Jordan. A stream coming from the the south, apparently from the marsh, joins it on the lower side of the Tell; and two others, one passing at the village, and another a mill-stream further south, tumble down the slope and go to join the Jâlûd in the plain below. The one by the village is obviously an artificial course; and perhaps the other likewise. The water of both has a slight odor of sulphur, and a darkish hue.[1] Scripture makes no allusion to the Jâlûd below the fountain.

*Stream of Wady el-Fâri'a.* This valley has been already described.[2] Its fine brook in winter drains the whole northern part of the plain Mŭkhna by Nâbulus, and receives branches from several side valleys. It is a beautiful stream, fringed with oleanders, and meandering through the rich, meadow-like plain, until it enters the Jordan, just north of Kŭrn Sŭrtabeh. The Kŭrâwa has several rivulets; but whether there is always water in the lower part of the main channel, is uncertain, though probable.[3]

*Water of Jericho.* This water, mentioned in the book of Joshua, is, doubtless, the winter stream of the Wady Kelt, which passes down by Jericho, and receives the waters of Elisha's fountain.[4]

[1] Later Biblical Researches, p. 327. [2] See above, pp. 92, 93.
[3] Later Biblical Researches, pp. 303, 304. Van de Velde, Memoir, p. 124.
[4] Josh. xvi. 1. See above, p. 94.

## IV. RIVERS ALONG THE COAST.

The rivers which enter the Mediterranean are few, and their permanent streams in no case reach back further than the plain along the coast.

*The Belus.* The *Belus*, celebrated in ancient times for the accidental discovery of the art of making glass, is mentioned by Pliny, Josephus, and other ancient writers, but not in Scripture.[1] It is now called Nahr Na'mân, and has its rise near Tell Kŭrdâny in the middle of the southern part of the plain of 'Akka. Here is a marshy tract with large fountains; there is an ancient dam below the marsh, which raises the water so as to form a small lake, and drive several mills. This is doubtless the marsh, *palus Cendevia*, spoken of by Pliny as the source of the Belus. It runs as a small river about N. N. W. through the plain, and enters the sea about fifteen minutes south of the gate of 'Akka. Its whole course is about six miles. It receives Wady 'Abilîn (Jiphthah-el) and Wady Sha'ab, both coming from the mountains, but they bring to it no water save in the rainy season.[2]

*The Kishon.* "That ancient river, the river Kishon," renowned as it is in Scripture, is mentioned only five times; referring in four passages to the victory of Deborah and Barak, and once to the slaughter of the prophets of Baal by Elijah.[3] It is worthy of remark, that all these notices relate to the Kishon in or near the plain of Esdraelon, where for a great part of the year it is wholly dry. The Kishon is called

[1] Plin. Hist. Nat., 5. 17. Ibid., 36, 65. Joseph. Bel. Jud., 2. 10. 2. Later Biblical Researches, p. 104.

[2] Later Biblical Researches, p. 104. Thomson, Land and Book, I. p. 486.

[3] Judg. iv. 7, 13, v. 21; Ps. lxxxiii. 9 [10]; 1 Kings xviii. 40.

a *Nahal* (נַחַל); apparently from the deep gully or ravine in which it flows.

The remote winter sources of the Kishon, now called Nahr el-Mukŭtta' (the ford), are the water-courses which drain the northern and southern tracts or arms of the great plain extending eastward from this latter. That from the southern arm is the most distant, having its beginnings from up towards the height of ground, and receiving also the brook from Jenîn and from similar fountains further west. The beginning of the water-course in the northern valley is less definitely marked. From the village of *Endor*, over against Mount Tabor, a shallow Wady passes down northeast to Wady Sherâr, and so to Wady el-Bîreh and the Jordan. Not far west of Endor another small Wady descends northwest, draining its waters to the Kishon. In this northern arm of the plain, therefore, the division of the waters would appear to be, in general, not far from a line drawn from the summit of Tabor to the summit of Little Hermon.

The waters of the rainy season, which descend from the western slopes of Tabor and the hills around Nazareth, not only render this the larger branch of the Kishon, but also sometimes inundate the northern part of the plain towards Iksâl and Debûrieh. It was thus inundated at the time of the battle of Mount Tabor, April 16, 1799, between the French and Arabs, where many of the latter are expressly said to have been drowned in the stream coming from Debûrieh, which then overflowed a part of the plain.[1] One traveller, in crossing from Sôlam to Nazareth early in June, describes himself as passing, in half an hour from Sôlam, a considerable brook from the eastward, and afterwards some

[1] Burckhardt, Syria, p. 339. Biblical Researches, II. p. 328 [III. p. 177].

others, which flowed into a small lake on the north side of the plain.[1]

The place of junction of the two arms of the Kishon is not specified, but it would seem to be near the middle of the plain, not far east of the road between Lejjûn and Nazareth. Along the course of the stream in this part, in early spring, the ground is miry and difficult. Prokesch, passing from Lejjûn to Nazareth in April, came upon the Kishon flowing in a deep bed through marshy ground, and wandered about for some time to find the way, until he was set right by an Arab. On this route are the ruins of a Saracenic bridge.[2] The brook from Lejjûn ('the waters of Megiddo'),[3] and also the frequent brooks from the southern hills between that point and Carmel, all conspire to render the soil in many places wet and miry in the rainy season, and for some time later. The Kishon in its course strikes the base of Carmel, and then passes down to the plain of 'Akka by a narrow valley between that mountain and the low hills west of Nazareth.

All these circumstances, especially the inundations and the marshes further down, fully bear out the sacred poetess in affirming that the forces of the enemy were swept away by the Kishon, swollen as the stream doubtless was by the tempest and rain, with which "they fought from heaven; the stars in their courses fought against Sisera."[4]

On the other hand, later in the season, and earlier or later in different years, the case is altogether reversed. In the middle of June, 1838, in travelling from Jenîn to Nazareth,

[1] Monro, Summer Ramble, I. p. 281.

[2] Prokesch, Reise ins h. Land, p. 129. Wildenbruch in Monatsb. der Ges. für Erdk., 1844, p. 233. Biblical Researches, II. p. 364 [III. p. 230]. Comp. Thomson, Land and Book, II. p. 141.

[3] Judg. v. 19.

[4] Judg. v. 20, 21.

we found not a drop of water in the plain. Wildenbruch, passing still later from Lejjûn to Nazareth, crossed midway of the plain the broad and dry bed of the Kishon with its ruined bridge. In the middle of April, 1852, we crossed the Kishon on our way from Tell esh-Shemâm to Lejjûn ; it was then a pretty brook, flowing in a deep gully in the plain, over a bed of gravel. Not far above were pools and miry places, and the Arabs said the gravel here was only a few inches thick, and treacherous. Early in April, too, W. M. Thomson once crossed the Kishon below its entrance into the plain of 'Akka, and found its bed quite dry. Of course, Wady Melik was also dry.[1]

The permanent sources, then, of the Kishon or el-Mukŭtta', are below the point where its course enters the plain of 'Akka. Shaw was the first to speak of them. They flow out, as large fountains, from the roots of Carmel, about three miles east of Haifa. They are called Sa'âdeh or Sa'âdîyeh, are very little above the level of the sea, and the water is brackish. A deep, broad stream is formed at once, which winds sluggishly through a tract of marsh to the sea. During the rains of winter it is of course greatly enlarged by the river which then comes from the plain of Esdraelon.[2] These sources of the Kishon thus have a resemblance to those of the 'Aujeh at Râs el-'Ain.

The passage of the Mukŭtta' near its mouth, on the way between 'Akka and Haifa, differs greatly, according to the season of the year. In winter and spring, when the stream

[1] Biblical Researches, II. pp. 363-365 [III. pp. 229-233]. Later Biblical Researches, p. 116. Wildenbruch in Monatsb. der Ges. für Erdk., 1844, p. 233. Thomson, Land and Book, p. 141. See above, p. 107.

[2] Shaw's Travels (4to.), p. 274. Thomson, Land and Book, II. p. 141. Porter's Handbook, p. 383.

is swollen, the traveller has to cross in a boat, and let his animals swim after it. The western winds drive up the sand, and form a bar across its mouth. This renders the river fordable later in spring, with three or four feet of water on the bar. Still later in the season, when the river is lowest, the sand-bank rises above the surface of the water, and forms a causeway through which the water percolates, and on which the traveller may pass over dry shod, until the swelling stream again washes the bank away.[1]

South of Mount Carmel the streams, with one exception, are not large, and only a few are permanent.

*Nahr Belka.* This stream is half an hour south of Tantûra, the ancient *Dor*. Though small, and of no great length, it is deep and miry, so that travellers ride into the sea and pass around its mouth. It seems permanent, and is known also as Nahr Tantûrah and Nahr Kŭrâjeh.[2]

*Nahr ez-Zerka.* Some forty minutes north of Cesaraea is the longer river Zerka, a deep and permanent stream, though not large, with the ruins of a Roman bridge higher up.[3]

Connected with this river, there is a popular tradition that it is inhabited by crocodiles; and the natives sometimes still call it Maat Temsâh, 'crocodile water.' Strabo speaks of the name of a former town *Crocodilon*, between 'Akka and Cesaraea; Pliny has the same, and gives the name likewise to a river.[4] The tradition first appears in the time of the

[1] Thomson, Land and Book, I. p. 492. Biblical Researches, II. p. 365 [III. p. 232].

[2] Biblical Researches, II. p. 528 [III. p. 469]. Wilson, Lands of the Bible, II. p. 250. Porter's Handbook, p. 368. All these have the name *Nahr Belka*. Wildenbruch has *Nahr Tantûra*, Monatsb. der Ges. für Erdk., 1844, p. 232. Pococke has *Nahr Kŭrâjeh*, II. p. 58.

[3] Biblical Researches, II. p. 528 [III. p. 469]. Wilson, Lands of the Bible, II. p. 250. Porter's Handbook, p. 368. Prokesch, p. 28.

[4] Strabo. 16. 2. 27, p. 758. Plin. Nat. Hist., 5. 17.

crusades; and is also mentioned by travellers down to the present time. There is much strong assertion; but it does not appear that any person, whether native or foreigner, has ever himself actually seen a living crocodile in this region.[1]

The Nahr ez-Zerka seems to be, without much question, the stream *Shihor-Libnath* of Scripture, on the southern border of the tribe of Asher.[2] The town of Dor (Tantûra), which was assigned to Manasseh, lay within the territory of Asher;[3] and the river Zerka would be the natural southern boundary in that quarter. This is the only stream south of Carmel mentioned in Scripture.

*Nahr el-Akhdar.* About one hour south of Cesarea the unimportant stream el-Akhdar enters the sea.

All the streams thus far are enlarged in winter by torrents from the southwestern slopes of Carmel.

*Nahr Abu Zabûrah.* This is a permanent stream running to the sea nearly three hours south of Cesarea. Just north of its mouth is a little bay or port, called Mîna Abu Zabûrah. This river, the permanent sources of which are in the plain, serves in winter as the drain of various Wadys from the southern part of Carmel, and likewise for Wady Abu Nâr coming from the plain of Dothan; if not also, perhaps, for Wady Mussîn and Wady Sha'îr.[4] Recent maps, however, make the two latter run to the Failak.

*Nahr Arsûf* or *Nahr el-Failak.* This stream is midway between Cesarea and Joppa; and is fed by several marshes and ponds along the plain near the sea, full of gigantic

[1] Vinisauf in Bohn's Chronicles of the Crusaders, p. 230. Pococke, II. i. p. 58. See other historical notices in Tobler Dritte Wanderung, pp. 375–378.

[2] Josh. xix. 26. [3] Josh. xvii. 11.

[4] Biblical Researches, II. p. 528 [III. p. 469]. Later Biblical Researches, pp. 121, 125, 126. See above, pp. 107–109. Thomson, Land and Book, II. pp. 255, 259.

reeds and rushes. These ponds swarm with leeches; which are collected by persons who wade in and let them adhere to their bare legs. In autumn no stream reaches the sea. The earlier name, Nahr Arsûf, so called from the village near its mouth, has been supplanted on more recent maps by that of Nahr el-Failak, from a small village near one of the ponds. The position of Arsûf coincides with the site of ancient Apollonia, twenty-two Roman miles from Cesaraea, as given in the Peutinger Tables.[1] According to the recent maps, this stream, in winter, receives also the waters drained from the district between Sânûr and Nâbulus.

*Nahr el-'Aujeh.* The 'Aujeh, though short, is the longest permanent river in Palestine, next to the Jordan. In winter it receives the waters brought down from the mountains by the numerous Wadys which descend between 'Azzûn and Sârîs.[2] This river is also spoken of as Nahr Budrus or Butrus (Peter), as receiving the great Wady from Ludd, which is sometimes called by that name.

The proper source of the 'Aujeh is at a place called Râs el-'Ain, at the base of the hills a little northwest from Mejdel Yâba, and about eight or nine miles distant from the sea. Here, on a low mound, is a ruined modern fortress, in the form of a parallelogram. At the foot of the mound, in the west, are the immense fountains constituting the source of the river 'Aujeh. They form a marshy tract, covered

[1] Wilson, Lands of the Bible, II. p. 254. Thomson, Land and Book, II. pp. 267, 268. Wildenbruch in Monatsb. der Ges. für Erdk., 1844, p. 232. Porter's Handbook, pp. 364, 365. There is some confusion in recent maps and books, in consequence of the positive assertion of Wildenbruch that Arsûf lies further south, and is only a quarter of an hour north of el-Haram. But this is contradicted by the express testimony of Wilson, Thomson, and Porter; as also by the position of Apollonia, with the site of which Arsûf has long been identified.

[2] See these valleys described above, pp. 109–112.

with reeds and rushes. These and other fountains below furnish, in summer, the whole supply of water for the river; which is nearly as large as the Jordan at Jericho. The water has a bluish tinge; the stream is dark, deep, and usually sluggish; and is hardly to be forded at any place. The river sweeps off about W. N. W. until it reaches the hills or higher plateau, between the inner plain and that along the shore. Just here are several mills, a mile from the source. The stream then passes on about W. by S. under steep banks formed by low cliffs, to the sea. About two miles from the mouth is an old bridge, on the great road from Yâfa along the coast.[1] No allusion to the 'Aujeh is found in Scripture. Its permanent sources are similar to those of the Kishon and Belus.

*Streams South of Yâfa.* No permanent stream enters the sea from the Sephela, a great plain south of Yafa. The Nahr Rûbîn, which has already been described as the estuary of the great Wady es-Sŭrâr,[2] runs northwest by Yebna (*Jabneh*) to the sea; but in autumn it sometimes dries up. In October, 1817, Irby and Mangles crossed it near the ruins of a Roman bridge west of Yebna; it was then nearly dry above, but had a handsome sheet of water below. In November 1857, Tobler found no trace of water.[3] The case appears to be similar with the estuary of Wady Simsim, near 'Askŭlân. The *river* or *torrent of Egypt*, which drains the interior of the southern desert, now Wady el-'Arîsh, has no permanent stream; and has already been described.[4]

Indeed, strictly speaking, none of the Wadys and water-

[1] Later Biblical Researches, p. 140. Porter's Handbook, p. 364.

[2] See above, p. 113.

[3] Irby and Mangles, 1847, p. 57. Tobler Dritte Wanderung, pp. 20, 24, 25.

[4] See above, p. 123.

courses south of the 'Aujeh, require any mention here under the head of RIVERS; inasmuch as none of them have perennial waters. Yet, as they are usually marked upon the maps with all the fulness and distinctness of permanent streams, this explanation is not inappropriate.

## SECTION II

### LAKES.

Of the four lakes of Palestine, the northernmost, Phiala, was long accounted one of the sources of the Jordan. Two others, the lake of the Hûleh and that of Tiberias, are merely expansions of the waters of the Jordan. The fourth, the Dead Sea, is the recipient of the waters of that river, as also of the Arnon and other streams from the eastern mountains. The Phiala is the smallest of the four, and the Dead Sea the largest; the relative magnitude of the four lakes increasing from north to south in the order in which they lie.

#### I. PHIALA.

The little lake *Phiala*, now called Birket er-Râm, is on the mountain, nearly east by south from Bâniâs, and two hours distant from that place. Its elevation above the Mediterranean is given by Roth at about three thousand three hundred feet, or some two thousand six hundred feet above the valley below.[1]

The lake is at the bottom of a deep bowl, apparently an extinct crater; not less than from a hundred and fifty to two hundred feet below the level of the surrounding tract. The form is an irregular circle; the diameter of the water being

[1] Petermann's Geograph. Mittheil., 1859, p. 290. See above, p. 75.

a mile, and perhaps more. The tract around is high table-land, rising on the south of the basin almost at once into wooded or bushy hills; and skirted at some distance on the east likewise by a wooded range. The declivities of the basin itself, consisting mostly of ancient lava, are dreary and desolate, with only an occasional shrub and a few patches of tillage; but the country round about, though not fertile, is more cultivated.

The lake has no outlet nor inlet, and is not deep. The water, which is stagnant and impure, looks and feels slimy. As we saw the lake, late in May, 1852, it was muddy for a few feet just at the margin; and did not seem to be clear and pure in any part. At a short distance from the shore was a broad belt of water-plants, already turned brown, and in some places resembling islands. The middle of the lake was free. Wild ducks were swimming in different parts. A large hawk was sailing above them, and occasionally swooping down to the surface of the water, as if to seize a duck or a frog. Myriads and myriads of frogs lined the shores; and it was amusing to see them perched thickly along the stones, as if drawn up in battle array to keep off intruders. It is the very paradise of frogs. The lake supplies the whole country with leeches; here too they are gathered by men wading in and letting the leeches fasten themselves upon their legs. The ground along the margin is mostly without reeds or rushes; and is covered with small black volcanic stones. The shores and sides of the crater exhibit everywhere small glistening black crystals, resembling hornblende.[1]

According to Josephus, the *Phiala*, so called from its bowl-like form, was situated on the road leading over the moun-

[1] Later Biblical Researches, pp. 399, 400. Anderson's Geological Report, p. 110.

tain from Cesaraea Philippi (Bâniâs) to Trachonitis, and not far distant from that road *upon the right*. This description at once identifies the Phiala with the present Birket er-Râm, since there is no other body of water whatever on the right of that road. The position, too, was such, that popular belief regarded the Phiala as the true source of the great fountain at Bâniâs, and Josephus relates, that the tetrarch Philip once caused chaff to be thrown into the Phiala, which was carried down and found at Paneum.[1] This story helps to confirm the identity of Phiala with Birket er-Râm; but the supply of such a fountain as that of Bâniâs would exhaust this lake in a single day. Nor can the bright, limpid, sparkling waters of that fountain be supposed to have any connection with the dark, stagnant, slimy fluid which fills the lake.

Seetzen heard of the lake, but did not visit it. Irby and Mangles were the first to examine it, in passing from Damascus to Bâniâs, in 1818.[2]

### II. LAKE OF THE HÛLEH.

This lake occupies the southern and lowest part of the basin of the Hûleh already described. The nature of the country around imparts to it a triangular form, the apex being towards the south, where the Jordan issues from it. The eastern side lies along near the eastern mountain and parallel to it, while the western side runs off in a northwesterly direction, skirted by a plain somewhat higher than the lake. The northern side is bordered by an extensive marsh, stretching in some parts quite across the whole valley, and covered with gigantic reeds and canes, through which the waters of the upper Jordan lazily find their way. The length of the

[1] Joseph. Bel. Jud., 3. 10. 7. Later Biblical Researches, p. 400.

[2] Seetzen, Reisen, I. pp. 334, 335. Irby and Mangles, p. 87.

lake itself from north to south is some four or five miles; its breadth is from three to four miles. The marsh extends up northward five or six miles, after which succeeds the fertile meadow-like tract already described, in which is the junction of the streams of the Jordan.[1] The lake does not appear to be deep. It has never been sounded, and no boat, apparently, has ever floated upon its waters. The elevation of the lake, according to Wildenbruch, does not vary much from one hundred feet above the Mediterranean.[2]

This lake is known in Scripture as the *Waters of Merom*, near which Joshua overthrew the hosts of Jabin king of Hazor.[3] It is not mentioned in the New Testament, but is the *lake Semechonitis* of Josephus, over which the city of Hazor was situated.[4]

### III. LAKE OF TIBERIAS.

The lake of Tiberias, now Bahr Tŭbarîyeh, is the second basin of the Jordan, in which the waters of that river spread themselves out, after rushing down the narrow basaltic chasm below the lake of the Hûleh. This lower lake is an irregular oval, being broadest in the middle, and wider at the northern end than at the southern. The length is nearest thirteen miles, by a breadth of about six miles across the middle. The lake is depressed below the level of the Mediterranean, but the measurements, as yet, with one exception, have been made with the barometer, and the results are quite various. According to Lynch, the depression amounts to nearest six hundred and fifty feet; the mean obtained by seven different

[1] Later Biblical Researches, pp. 361, 370. Porter's Handbook, p. 435. See above, pp. 76, 152, 153.

[2] Berliner Monatsber., III., 1845, p. 271.

[3] Josh. xi. 5, 7.

[4] Joseph. Antiq., 5. 5. 1. Bel. Jud., 3. 10. 8. Ibid., 4. 1. 1.

observers being six hundred and sixty feet.[1] Taking the first as a round number, this lake is some seven hundred and fifty feet lower than that of the Hûleh. Lynch sounded and found the greatest depth to be one hundred and sixty-five feet, the bottom being a concave basin.[2] But the quantity of water in the lake varies at different seasons. The rains and melting snows from Lebanon and the adjacent hills cause it to rise in winter and spring three or four feet above its ordinary level, and it sometimes overflows the courtyards of the houses along its shore in Tiberias. These superabundant waters being thus spread out, first over the surface of the upper lake, and then over the lake of Tiberias, all great or violent inundations of the Jordan, as we have seen, are thereby prevented. The story told by some travellers, that the Jordan holds on its way through the middle of the lake, without mingling its waters, is of course nothing more than a fable.[3]

The water of the lake, as Josephus testifies, is sweet and most potable.[4] The inhabitants of Tiberias have no other water. It is clear, sparkling, and pleasant to the taste. Still, some of our party thought they perceived in it a slight brackish taste, which, considering the very copious brackish fountains that flow into it, is not improbable.

The lake is full of fish of various kinds; Josephus says that some of the species are peculiar to it. Hasselquist the naturalist, was the first in modern times to note that some of the varieties of fish found here are met with also in the

[1] Lynch more exactly, six hundred and fifty-three feet. The seven observers are: Lynch, Russegger, Schubert, Bertou, Symonds, Wildenbruch, Allen.

[2] Official Report, p. 15. Biblical Researches, I. Note, p. 613.

[3] Biblical Researches, II. pp. 385, 414 [III. pp. 261, 309].

[4] Λίμνη ..... γλυκεῖά τε ὅμως ἐστὶ καὶ ποτιμωτάτη, Joseph. Bel. Jud., 3. 10. 7.

Nile; namely, *Silurus* and *Mugil* (chub), and likewise another which he names *Sparus Galilaeus*, a species of bream.[1] We had no difficulty, in 1838, in procuring an abundant supply for our evening and morning meal at Tiberias; and found them delicate and well flavored. The fishing is carried on only from the shore with hand-nets; never at the present day from a boat. The right to fish is farmed out by the government. It is worthy of remark, that the inhabitants of the village at 'Ain et-Tâbighah, probably the ancient Bethsaida of Galilee, still live by fishing.[2]

At the present day a single boat, and that a sail-boat, is kept upon the lake, usually at Tiberias, for the purpose of bringing wood from the opposite shore. Pococke, in 1738, took a sail upon the lake; and there are again notices of such a boat from 1806 onward. It appears to have been often renewed. The one which we saw in 1838, or its successor, was hired by Lynch, in 1848; but was soon wrecked in the rapids of the Jordan. In 1852, it had been replaced.[3]

The shores of the lake of Tiberias present, at most seasons, few features of beauty or grandeur. The lake itself is a fine sheet of limpid water, lying deep in its depressed basin, in the midst of higher tracts around it. Along its whole eastern side, the mountain wall, steep, but not precipitous, rises perhaps a thousand feet, and then the table-land above spreads off into the great plain of Haurân. On the western side there is a similar wall along the southern half of the lake, and the plain above extends back to Mount Tabor.

[1] Joseph. Bel. Jud., 3. 10. 7. Hasselquist, Reise, pp. 181, 380, 412 sq., 428 sq.

[2] Burckhardt, Syria, p. 318. Biblical Researches, II. p. 386 [III. p. 261].

[3] Biblical Researches, II. p. 386 [III. p. 262]. Pococke, Description of the East, II. i. p. 69. Lynch, Official Report, pp. 15, 17. Van de Velde, Narrative, II. p. 399.

Then comes the plain of Gennesareth; and further north the land rises gradually from the shore into the tract of irregular broken table-land which intervenes between the two lakes. West of this tract lie the higher mountains around Safed. But, in general, the hills along the lake are monotonous and tame, with very little of the picturesque in their form, and they are decked by no shrubs nor forests. In early spring, indeed, the verdure of the grass and herbage imparts to them a pleasing aspect; but at other times they are naked and dreary. Whoever looks here for the magnificence of the lakes of Switzerland or Southern Germany, or the softer beauty of those of England and the United States, will be disappointed. The regular and almost unbroken heights which surround this lake, bear no comparison, as to vivid and powerful effect, with the stern and savage grandeur of the mountains around the Dead Sea.[1]

The position of this lake, so deeply depressed in the midst of higher tracts of country, exposes it, as a matter of course, to gusts of wind and in winter to tempests. One such storm is recorded during our Lord's ministry; and another instance, where the wind was contrary and great.[2] But in order to account for these, it is not necessary to assume any peculiarly tempestuous character of the lake itself; nor does it appear, either from the testimony of the ancients or of the present inhabitants, that storms are more frequent within the basin than in the region round about.[3]

The volcanic tract, through which the Jordan breaks its way below the Hûleh, extends down also on both sides of the

[1] Biblical Researches, II. pp. 380, 416 [III. pp. 252, 312].

[2] Matth. viii. 23 sq.; Mark iv. 35 sq.; Luke viii. 22 sq. Matth. xiv. 24; Mark vi. 48; John vi. 18.

[3] Biblical Researches, II. p. 416 [III. p. 312].

lower lake. On the western side, the ground back and north of the plain of Gennesareth is thickly strewed with black basaltic stones. On some of the hilltops clusters of similar rocks are so grouped together as to present almost the appearance of architectural ruins.[1]

Historical Notices. In the New Testament this lake is once called *the lake* (λίμνη) *of Gennesaret;* oftener, *the sea* (θάλασσα) *of Galilee* or of *Tiberias*.[2] The Apocrypha has *the water of Gennesar;* and Josephus calls it *the lake of Gennesar*, or also *of Tiberias*.[3] The ancient Hebrew name was *the sea* (יָם) *of Chinnereth* or *Chinneroth*. It is mentioned but four times in the Old Testament, and only in reference to boundaries.[4]

But this want of prominence of the lake in the Old Testament is amply made up in the New; where this fine sheet of water is intimately interwoven with the life and ministry of our Lord Jesus Christ. He walked upon its shores; he sailed upon its waters; his home was at Capernaum; and in Capernaum, Bethsaida, and Chorazin, towns lying along its western shore, most of his mighty works were done.[5] However tame may be the scenery of the lake, yet aided by these historical and hallowed associations, it exerts upon the Christian traveller a fascination and a charm to which the mere magnificence of nature can never aspire.

The evangelists record three instances in which our Lord crossed the lake in a boat, with his disciples, to the eastern shore, and afterwards returned. The first time was when

[1] Later Biblical Researches, pp. 342, 347.

[2] Luke v. 1; John vi. 1; Matth. iv. 18; Mark i. 16; John vi. 1; xxi. 1.

[3] 1 Macc. xi. 67. Joseph. Bel. Jud., 3. 10. 7. Ibid., 3. 3. 5.

[4] Num. xxxiv. 11; Josh. xiii. 27; Deut. iii. 17; Josh. xii. 3.

[5] Matth. xi. 20–23.

he healed the two demoniacs of the Gadarenes, having stilled the tempest on the way; to this we have already alluded.[1] Again he feeds the five thousand on the northeast coast of the lake; and sending back his disciples alone with the boat, he follows them walking on the water.[2] The third time, he fed the four thousand in Decapolis, and returned to Magdala.[3] Still another time, he crossed the lake to the northeast quarter; and then made his way by the northern Bethsaida to Cesarea Philippi (Bâniâs).[4]

In those days boats were frequent upon the lake. When our Lord had fed the five thousand on the northeast of the lake, and his disciples had gone away in the only boat, other boats came from Tiberias nigh unto the place, so that the multitude were able to pass over to Capernaum.[5] On the capture of Tarichaea, at the south end of the lake, by Vespasian and Titus, great numbers of the inhabitants escaped by water and remained upon the lake, in boats and small craft, which they had prepared for the purpose. Vespasian caused boats to be got ready in order to pursue them upon the lake. A naval fight took place, in which the Jews and their boats were totally destroyed.[6]

The fisheries of the lake, in ancient times, were more extensive and productive than now. Four of the apostles, Andrew, Peter, James, and John, if not others, were fishermen. Several of our Lord's comparisons and miracles were

[1] Matth. viii. 23 sq., comp. ix. 1; Mark iv. 36 sq., comp. v. 21; Luke viii. 22 sq., comp. 40.

[2] Matth. xiv. 13 sq., comp. 22, 25; Mark vi. 32 sq., comp. 45, 48; Luke ix. 10 sq.; John vi. 1, comp. 17, 19.

[3] Matth. xv. 29 sq., comp. 39; Mark vii. 31 sq., comp. viii. 10.

[4] Mark viii. 13, comp. 22, 27.

[5] John vi. 22–24.

[6] Joseph. Bel. Jud., 3. 10. 1, 5, 6, 9.

connected with fishing.[1] The fish were caught usually, it would seem, with drag-nets, cast from boats, but sometimes with a hook.[2] So many persons followed this business, that two towns near the lake received the name of *Bethsaida*, 'house of fishing.' One, Bethsaida of Galilee, the home of Andrew and Peter, was on the west shore of the lake, probably at et-Tâbighah, where the poor inhabitants still live by fishing. The other Bethsaida, called also Julias, was in Gaulonitis, on the eastern bank of the Jordan, two miles above the lake; near the foot of the steep descent of the river. It may be, that the fish, attempting to ascend the Jordan, were here stopped by the rapids and falls, and were thus congregated in great numbers; so that the place became a favorite resort for fishermen.

Hot Springs. Having already described the hot springs connected with the rivers Hieromax and Zerka Ma'în, we may here appropriately speak of those on the shore of this lake.

They are situated close to the lake, about thirty-five minutes south of Tiberias, on a part of the shore a little elevated above the water. There is an old bath-house in decay; and a new and splendid one begun in 1833 by Ibrahim Pasha of Egypt; but no ancient remains are found. There are four fountains at intervals of a few paces from each other. A covered channel now runs along before them all, conducting the water into a common reservoir; so that comparatively very little rises to the surface and runs directly into the lake. The water as it oozes from the ground, is too hot to bear the hand in it, the temperature being 144° Far.

[1] Matth. iv. 19 and Luke v. 10; Matth. xiii. 47; Matth. iv. 18 sq. and Luke v. 1 sq.; Matth. xvii. 27; John xxi. 1–7.

[2] Luke v. 4–6; John xxi. 6; Matth. xvii. 27.

The taste is excessively salt and bitter, like heated sea-water; there is also a strong smell of sulphur, but no taste of it. The water deposits a sediment, as it runs down to the lake, which differs in color below the different springs, being in one white, in another greenish, in a third reddish yellow, etc. The water is impregnated with various salts; the chief of which is *chloride of sodium*.[1] These baths are regarded as efficacious in rheumatic complaints and in cases of debility; and are visited, chiefly in July, by people from all parts of Syria.[2]

These hot springs are mentioned by Pliny, and not unfrequently by Josephus and in the Talmud. Josephus calls the place *Ammaus*, signifying 'warm baths;' so that this name would seem to be nothing more than a Greek form for the Hebrew *Hammath*, which has the same meaning, and was the name of a town belonging to the tribe of Naphthali.[3]

## IV. THE DEAD SEA.

The Dead Sea is the third and largest basin, into which the Jordan discharges its waters. The lake has no outlet; and the accumulation of the waters in it, is counteracted only by strong evaporation. Its deep position and physical phenomena render it the most remarkable body of water in the known world.

*Name.* The earliest Hebrew name is *the Salt Sea* (יָם הַמֶּלַח); then also, *the sea of the 'Arabah* (desert); and sometimes both names are used together.[4] In the prophets it is also

[1] For analyses of these waters, see Anderson's Geological Report (in Lynch), p. 202.

[2] Biblical Researches, II. pp. 383–385 [III. pp. 258–260].

[3] Plin. Nat. Hist., 5. 15. Joseph. Antiq., 18. 2. 3. Bel. Jud., 4. 1. 3. Lightfoot, Opera, II. pp. 224, 225. *Hammath*, Josh. xix. 35.

[4] Salt Sea, Gen. xiv. 3; Num. xxxiv. 3, 12; Josh. xv. 2, 5, xviii. 19. Sea of

spoken of as *the Eastern Sea.*[1] It is mostly referred to as a boundary or limit.

In the New Testament there is no allusion to the Dead Sea. Josephus and Galen call it *Asphaltites*, 'the asphaltic lake;' and the latter, as likewise Eusebius and other Greek writers speak of it also as *the Dead Sea.*[2] The Arabs call it Bahr Lût, 'Sea of Lot.'

*Form and Extent.* The Dead Sea occupies the lowest and deepest portion of the Ghôr, the deep valley or *fissure*, which extends from Mount Hermon to the Red Sea. This great chasm, for most of its length, — that is to say, from about Lat. 33° to Lat. 30°, or one hundred and eighty geographical miles, — is depressed below the level of the Mediterranean. The Dead Sea lies about midway of this whole line of depression; of which it occupies somewhat less than one fourth part.

The mountains enclosing the Ghôr recede somewhat near Jericho; but at the north end of the sea they resume their usual course, and are parallel along its whole length; so the breadth of the lake is quite uniform, filling the whole interval from mountain to mountain. Its two ends are somewhat rounded. At the northwestern quarter, the shore north of Râs el-Feshkhah tends more to the northeast, contracting this portion of the lake, and leaving a tract of plain between it and the mountains. At the southwest quarter a like effect is produced by the salt mountain, which runs S. S. E. and also

the 'Arabah, Deut. iv. 49; 2 Kings xiv. 25; comp. p. 74. Both, Deut. iii. 17; Josh. iii. 16, xii. 3.

[1] Ezek. xlvii. 18; Joel ii. 20; Zech. xiv. 8.

[2] Λίμνη Ἀσφαλτῖτις, Joseph. Bel. Jud., 3. 10. 7. Ibid., 4. 7. 5. Galen de Simpl. Med. Fac., 4. 20. Pausan. 5. 7. 3; comp. Reland, p. 241 sq. Θάλασσα νεκρά, Galen de Simpl. Med. Fac., 4. 20. Eusebius, Onomast., Article *Mare Salinarum;* where Jerome, 'Mare Mortuum.'

contracts that end of the lake. In the southern portion of the lake, a long low peninsula connected by a broad isthmus with the eastern shore occupies for some distance two thirds of the breadth of the lake. The body of water south of the peninsula is often spoken of as 'the South Bay;' it is nearly round, and comparatively shallow.

The length of the Dead Sea, as fixed by Lynch and his party, is forty geographical miles; the breadth being from nine to nine and three fourths geographical miles.[1] Our own observations in 1838 had given the length at thirty-nine geographical miles and the general breadth at nine geographical miles. The shore at the southern end is almost a dead flat, and a slight rise in the lake would cause the water to extend up two or three miles further south, and thus increase the length. There are various indications, that in 1848 the water of the lake was higher and extended further south, than when we saw it in 1838.[2]

*Depth and Depression.* The careful soundings of the United States' Expedition under Lieut. Lynch have settled the question of depth. The bottom of the lake, along the middle, was found to be a deep valley or plain, extending from the northern part to near the peninsula. The average depth of this valley is not far from one hundred and eighty fathoms, or one thousand and eighty feet; while at one point, on a line between 'Ain Terâbeh and the mouth of the Zerka Ma'în, they found the greatest depth; namely, two hundred and eighteen fathoms, or one thousand three hundred and eight feet. Molyneux, a year earlier, reported one sounding of two hundred and twenty-five fathoms, or one thousand

[1] Biblical Researches (2d ed.), I. p. 612, Note. Comp. Lynch, Official Report, p. 68.

[2] Biblical Researches, I. pp. 509, 515 [II. pp. 217, 225].

three hundred and fifty feet. In the bay, south of the peninsula, the depth was nowhere over two fathoms, or twelve feet.[1]

It may be remarked, however, that the level of the lake varies considerably at different seasons. Traces of the high-water mark are visible in many places; which show that at some seasons the level of the sea is ten or fifteen feet higher than at others. This is readily accounted for by the vast quantity of water brought into it during the rainy season, not only by the Jordan from the north, but, also, from the deserts in the south, and from the mountains along its sides. The quantity of rain which falls in Palestine varies greatly in different years; and the Dead Sea becoming in proportion more or less full, is subjected in a course of years to great variations.[2]

After the depth of the sea and the character of its shores had been thus determined, Lieut. Dale, the engineer of the Expedition (whose grave is at Beirût), carried a level from the shore of the Dead Sea at 'Ain Terâbeh across the mountains, by way of Jerusalem, to the shore of the Mediterranean, at Yâfa. This level gave 1316.7 feet, as the depression of the Dead Sea below the Mediterranean. The following are other results:[3]

| | Engl. Feet. |
|---|---|
| Depression of the Dead Sea, . . . . . | 1316.7 |
| Pass back of 'Ain Terâbeh, above Dead Sea, . . | 1305.75 |
| Elevation of Jerusalem above the Mediterranean, . | 2610.5 |
| Elevation of Jerusalem above Dead Sea, . . . | 3927.24 |
| Depth of Dead Sea, . . . . . | 1308. |

[1] Lynch, Official Report, p. 43, Section and Map. Biblical Researches (2d ed.), I. p. 612, Note. See above, p. 170.

[2] Biblical Researches, I. p. 515 [II. p. 225]. Pococke, Description of the East, II. i. p. 35. Irby and Mangles, p. 140.

[3] Lynch, Official Report, p. 43. Biblical Researches (2d ed.), I. p. 612, Note.

It is a singular coincidence that the depth and depression of the sea, according to these figures, are very nearly equal; each some thirteen hundred feet; and that the elevation of Jerusalem above the Mediterranean and the Dead Sea is, in each case, nearly a multiple of the same number.

The extraordinary anomaly of so enormous a depression of the Dead Sea appears never to have been suspected until the year 1837. In that year Moore and Beke made some imperfect experiments, as they had done elsewhere, by means of the boiling point of water; from which they inferred a depression of about five hundred feet. Schubert, the same year, made it 598.5 Paris, or about six hundred and thirty-eight English feet, by the barometer. Russegger and Burton, in 1838, first made the depression amount to more than thirteen hundred Paris feet. In 1841, Lieut. Symonds, by trigonometrical observations, obtained the result of 1312.2 English feet; a very close coincidence with the results of the level run by Lieut. Dale.[1]

*View from the Western Cliffs.* The traveller, in passing down from Hebron or Carmel to the brow of the cliffs above the Dead Sea, makes a descent equal to that between Hebron and the Mediterranean. This eastern slope is irregular and broken up by ridges and deep chasms running towards the lake. The descent is constant, and often very rapid. The way is long, desert, and dreary. After five or six hours, the traveller begins to look out for some glimpse of the sea; and expects soon to arrive at the shore nearly upon a level with its waters. But he is doomed to repeated disappointment; and it is only after seven hours of travel from Carmel, that he reaches the brow of a pass, and turning aside a few steps to what seems a small knoll on the right, he unexpectedly

[1] Biblical Researches, I. p. 513 [II. p. 222]. Also Biblical Researches (2d ed.), I. p. 612, Note.

finds himself on the summit of a perpendicular cliff, overhanging 'Ain Jidy and the sea, at least fifteen hundred feet above its waters. The Dead Sea lies below him in its vast, deep chasm, shut in on both sides by ranges of precipitous mountains; their bases sometimes jutting out into the water, and again retreating so as to leave a narrow strip of shore below. The view includes the whole of the Dead Sea, with the exception of the northern extremity, which is shut out by the adjacent higher and more projecting cliff el-Mersed.[1]

What struck us particularly in this view in 1838, was the belt of gravelly or pebbly shore which seemed to surround the lake, interrupted by many shoal-like points or deltas, which run out into the southern part, appearing at first sight like flat sand-banks or islands. The whole seemed more like a long, winding bay, or the estuary of a large river, when the tide is out, and the shores and shoals left dry. Indeed, there are various reasons to suppose that the level of the sea, as we saw it in 1838, was several feet lower than when visited by the United States' Expedition ten years later.

The peninsula is of course a prominent feature, and is seen in its whole form and extent. The strait between it and the western shore is so narrow, that from this point of view the southern end of the peninsula is seen across one of the larger spits or deltas above mentioned. Among the western mountains is seen the bold, projecting cliff of Sebbeh (Masada); and further on also the whole of Jebel Usdum or the Salt mountain. On the east are the mountains of Moab, springing from the water and shore in perpendicular cliffs, and rising above and back of these in far steeper and loftier masses than the mountains on the western coast. Across

[1] Comp. Biblical Researches, I. pp. 501–503 [II. pp. 205–207].

the isthmus of the low peninsula, towards the southeast, one looks up along a deep, straight ravine, at the head of which Kerak with its castle is visible, situated on a high, precipitous rock, far up near the summit of the mountain. Opposite 'Ain Jidy is the wild chasm and mouth of the Môjib (Arnon); and further north is seen Wady ez-Zerka Ma'în.

*Character of the Waters.* The water of the Dead Sea has a slightly greenish hue, and is not entirely transparent; but objects seen through it appear as if seen through oil. It is most intensely and intolerably salt; far more so than seawater; and leaves behind a nauseous, bitter taste, not unlike Glauber's salts. The specific gravity is greater than that of any other water known. Both these qualities of taste and weight, arise from the heavy solution of various salts contained in the water, chiefly those of magnesia and soda. But the amount and proportions of these salts, and of course the specific gravity, are found to vary somewhat in different parts of the sea, and at different seasons of the year. A portion of water taken from near the mouth of the Jordan might be expected to be less strongly saturated than another from near the middle of the lake; and during the rainy season, when the sea is filled and its level raised several feet, its waters are naturally more diluted than in autumn, after having been for months subjected to the process of evaporation under a burning sun in this deep caldron.

The following four analyses of the water are among the most recent: the first by Prof. C. G. Gmelin of Tübingen, 1826; the second by Dr. Apjohn of Dublin, 1839; the third by Prof. James C. Booth of Philadelphia, 1848; and the fourth by Messrs. Thornton and Herapath of Edinburgh, 1849. The point whence the water for the first analysis was obtained, is not specified. That analyzed by Dr. Apjohn was

taken half a mile from the mouth of the Jordan, near the close of the rainy season; and naturally exhibits a less amount of salts, and a less specific gravity.[1] The standard of comparison for the specific gravity is distilled water at 1000.

| | PROF. GMELIN. | DR. APJOHN. | |
|---|---|---|---|
| Specific gravity . . | 1212 | 1153 | Boiling point. 221° F. |
| Chloride of calcium . | 3.2141 | 2.438 | |
| " of magnesium . | 11.7734 | 9.370 | |
| Bromide of magnesium . | 0.4393 | 0.201 | |
| Chloride of potassium . | 1.6738 | 0.852 | |
| " of sodium . . | 7.0777 | 9.830 | |
| " of manganese . | 0.2117 | 0.005 | |
| " of aluminum . | 0.0896 | —— | |
| " of ammonium . | 0.0075 | —— | |
| Sulphate of lime . . | 0.0527 | 0.075 | |
| | 24.5398 | 18.780 | |
| Water . . . | 75.4602 | 81.320 | |
| | 100. | 100. | |

The water analyzed by Prof. Booth was drawn up by Lieut. Lynch from a depth of one hundred and eighty-five fathoms, or eleven hundred and ten feet, and shows a greater amount of salts and a greater specific gravity than any other.[2]

| | PROF. BOOTH. |
|---|---|
| Specific gravity at 60° | 1227.42 |
| Chloride of magnesium . . . . . | 145.8971 |
| " of calcium . . . . . | 31.0746 |
| " of sodium . . . . . | 78.5537 |
| " of potassium . . . . . | 6.5860 |
| Bromide of potassium . . . . . | 1.3741 |
| Sulphate of lime . . . . . | 0.7012 |
| | 264.1867 |
| Water . . . . . | 735.8133 |
| | 1000. |

[1] See other earlier analyses, Biblical Researches, I. p. 514 [II. p. 224].

[2] Lynch, Official Report, pp. 73, 204.

The water for the fourth analysis was taken from the northwestern shore, about half a mile west of the mouth of the Jordan, in the month of March, 1849. This analysis, therefore, might be expected to compare most nearly with that of Dr. Apjohn.

MESSRS. THORNTON AND HERAPATH.[1]

| | | |
|---|---|---|
| Specific gravity . . . . | 1172.05 | Boiling point 221° 75 F. |
| Chloride of calcium . . . . | | 2.455055 per cent. |
| " of magnesium . . . . | | 7.822007 |
| Bromide of magnesium . . . . | | 0.251173 |
| Chloride of sodium . . . . . | | 12.109724 |
| " of potassium . . . . . | | 1.217350 |
| " of ammonium . . . . | | 0.005999 |
| " of aluminum . . . . . | | 0.055944 |
| " of manganese . . . . | | 0.005998 |
| " of iron . . . . . | | 0.002718 |
| Organic matter (nitrogenous) . . . | | 0.061730 |
| Sulphate of lime . . . . . | | 0.067866 |
| | | 24.055564 per cent. |

Besides the above salts, there were likewise faint traces of carbonate of lime, silica, and bitumen, and also doubtful traces of iodine.

This excessive saltness and saturation of the waters of the Dead Sea is perhaps sufficiently accounted for by the immense masses of fossil salt, which lie on a mountain along its southwestern border. The waters of the lake do not indeed, at present, ordinarily wash the base of the salt mountain, though they appear to do so on some occasions; but the rains of winter, and the saline streamlets which we found running to the sea even in June, would naturally carry into it, in the course of ages, a sufficiency of salt to produce most of the phenomena. Still, as the salt of this mountain con-

[1] Edinburgh New Philosophical Journal, Jan. 1850, Vol. XLVIII. pp. 313–319.

tains no peculiar ingredients, and especially no bromium,[1] it is not improbable that the waters of the sea somewhere, perhaps in its hidden depths, come in contact with other mineral masses.

In consequence of its great specific gravity, the water of the Dead Sea is more buoyant than any other known. Persons unable to swim elsewhere, can here swim without difficulty, or can lie upon the water, or sit and stand in it without effort.[2] After bathing, we remarked no saline crust upon the body, as some travellers report; but there was a pricking sensation, especially where the skin had been chafed; and a sort of greasy feeling, as of oil on the skin, which lasted for several hours.

Ancient writers were well acquainted with the buoyant power of this water. Aristotle mentions the reports, founded doubtless in truth, that if men or beasts were thrown bound into the lake, they would not sink, but float upon the surface.[3]

The effect of the great specific gravity is seen, likewise, in the usual placidity of the sea, and the weight and force of the waves during high winds. The ordinary breezes of summer occasion scarcely a ripple on the surface; while high winds and tempests excite angry and ponderous billows. When the boats of Lynch entered the Dead Sea from the Jordan, a fresh northwest wind was blowing, which increased to a gale. This raised a heavy sea, in which the boats labored exceedingly; and the dense waves dashed upon the bows of the boats like sledge-hammers. The spray was painful to

[1] For analyses of the salt of Jebel Usdum, see Anderson's Geological Report, p. 181.

[2] Biblical Researches, I. p. 506 [II. p. 212]. Lynch, Narrative, p. 324.

[3] Aristot. Meteorol., II. 3. Galen de Simpl. Med. Fac., IV. 19. Joseph. Bel. Jud., 4. 8. 4. Reland, Palaestina, pp. 241, 249.

the eyes and skin; and, evaporating as it fell, left a crust of salt upon the faces, hands, and clothing. All at once the wind ceased, and the sea fell with equal rapidity; in twenty minutes the heavy waters had settled down into a placid surface.[1] The effect of similar waves rolling in upon the shore, is seen at 'Ain Jidy in the large bank of pebbles which there lines the shore, several feet higher than the ordinary level of the sea.

According to the testimony of all antiquity and of most modern travellers, there exists in the waters of the Dead Sea no living thing; no trace indeed of animal or vegetable life.[2] Occasionally a traveller has reported, that he found shells of snails or periwinkles along the shore, especially at the northern end; and small fish, either dead or dying, have been picked up in the same region. Seetzen searched for conchylia and sea-plants; but found none of either. Some snails that he picked up on the shore were land-snails. The shells reported have been invariably dead, without a trace of the living animal; and have probably been brought into the sea, in the lapse of time, from the Jordan, or from other streams and fountains on the east, south, and west of the lake. The small fish of the Jordan not unfrequently are carried or wander into the heavy waters of the lake; but they speedily die and float upon the surface, or are thrown out upon the shore. Schubert saw and picked up several such; and Jerome relates the same fact as known in his day: "When the Jordan, swollen by the rains, sometimes

[1] Lynch, Official Report, p. 31; Narrative, p. 268.

[2] Tacit. Hist. 5. 6. Galen de Simpl. Med. Fac., IV. 19, *φαίνεται ἐν ἐκείνῳ τῷ ὕδατι μήτη ζῶον ἐγγιγνόμενόντι, μήτε φυτόν.* Hieron. ad Ezek. xlvii. 8, "Mare mortuum, in quo nihil poterat esse vitale. Re vera, juxta literam, hac usque nihil quod spirat et possit incedere, prae amaritudine nimia, in hoc mari reperiri potest." Abulfeda, Tab. Syr. ed. Köhler, pp. 12, 156.

carries down fish into the lake, they die immediately and float upon the sluggish waters.[1]

The evaporation from the surface of the Dead Sea, lying in this deep caldron, shut in between lofty precipices of naked rock, and exposed for many months of the year to a burning and unclouded sun, is naturally very great. Under some circumstances, the vapor thus rising from the sea is visible to the naked eye. At 'Ain Jidy, at dawn, we could perceive the dense evaporation ascending and filling the whole chasm of the lake, and spreading itself as a thin haze above the tops of the mountains. Irby and Mangles likewise saw "the evaporation rising in broad, transparent columns of vapor, not unlike water-spouts in appearance, but very much longer."[2]

Here is a striking example of the equilibrium so often established by the Creator among the powers of nature. The Dead Sea, in the course of ages, has never been greatly enlarged by an excess of waters from the Jordan and rainy seasons; nor, on the other hand, has it ever been too far exhausted by the enormous evaporation.

One effect of this strong evaporation is seen in the deposits of salt made by the sea at certain places upon its shores. In the rainy season, when the lake is full, its water spreads itself over several low, marshy tracts; and when afterwards the level of the lake becomes lower, these tracts are left as shallow pools or basins; and the water in them being speedily evaporated, the bottom is covered with a thick crust of salt. The chief place of this kind is at Birket el-Khŭlîl, an hour or more south of 'Ain Jidy. This is a part of the beach more depressed and springy than the rest. It is flooded at the

[1] See more, Biblical Researches, I. pp. 516, 517 [II. pp. 226–228].

[2] Travels, p. 137. Biblical Researches, I. pp. 512, 524 [II. pp. 220, 239].

time of high sea, shortly after the spring rains, and shows over its entire area, very soon after the fall of the water, a crust or residuum of impure salt, thickest at the bottom of the pans, and thinning to a more frost-like efflorescence near the margin of the temporary pools. Bits of bitumen and sulphur are not unfrequently met with. At certain seasons, the tract is wet with the exudations of a fetid brine; and the whole neighborhood becomes reeking with the smells of sulphureous acid and sulphuretted hydrogen gas.

This salt is carried away on donkeys by the peasants of the villages south of Jerusalem, for their own use. We fell in with one such company at 'Ain Jidy.[1]

Similar salt pools and saline basins are found along the shore for two miles south of Birket el-Khŭlîl. A place was pointed out to us at the northwest corner of the sea, where salt is likewise gathered. On the eastern side of the lake, also, Irby and Mangles found Arabs on the north side of the isthmus of the peninsula, "peeling off a solid surface of salt, several inches in thickness, and loading it on asses." The same deposit is doubtless found on other parts of the coasts.[2]

It is not strange, that a lake exhibiting so many extraordinary features, — thus sunk in its deep chasm between sterile mountains, devoid of all animal and vegetable life within its waters, and surrounded by desolation, — should bear the appropriate name of *the Dead Sea*, nor that it should become the subject of superstitious and legendary reports. Seneca relates that bricks would not sink in it.[3] Early trav-

[1] Anderson's Geological Report, pp. 176, 177. Biblical Researches, I. p. 504 [II. p. 210].

[2] Biblical Researches, I. pp. 516, 535 [II. pp. 226, 254]. Irby and Mangles, p. 139.

[3] Seneca Quaest. Nat. lib. II. Reland, Palaestina, p. 248.

ellers describe the lake as an "infernal region;" its black and fetid waters always emitting a noisome smoke or vapor, which, being driven over the land, destroys all vegetation like a frost.[1] Hence too the popular report that birds cannot fly over its deadly waters.

All this, it is hardly necessary to say, is merely fabulous. Smokes are indeed often seen in the valley and on the hills; but they proceed from Arab encampments or from the preparation of charcoal. The waters of the lake itself emit no noisome smell nor noxious vapor. Some of the marshy spots along the shores send forth at some seasons, as we have seen, sulphuretted hydrogen gas; in other places there is the smell of decaying plants brought down by the Jordan or smaller streams and cast upon the shore; and, again, there is the usual odor of salt marshes, especially at the southern end. We ourselves saw, and many travellers have seen, birds flying in all directions over the lake. The absence of water-fowl has been remarked, and this is readily accounted for by the total absence of fish and water-plants, on which they feed. But the region is full of birds; and at 'Ain Jidy we were surprised and delighted to hear their morning song in the midst of the solitude and grandeur of these desolations. The trees, and rocks, and air around were full of the carols of the lark, the cheerful whistle of the quail, the call of the partridge, and the warbling of many other feathered choristers; while birds of prey were soaring and screaming in front of the cliffs and over the waters of the sea.

The Egyptian heat of the climate, which is found throughout the whole Ghôr, is in itself unhealthy; and, in connection with exhalations from the marshes, gives rise in summer

[1] Biblical Researches, I. p. 511 [II. p. 220]. Reland, Palaestina, p. 249. Comp. Tacit. Hist., 5. 6.

to intermittent fevers; so that the Ghawârineh, or proper inhabitants of the Ghôr, including the people of Jericho, are a feeble and sickly race. But this has no necessary connection with the Dead Sea, as such; and the same phenomena might probably exist, in at least an equal degree, were the waters of the lake fresh and limpid, or even were there here no lake at all.[1]

*Asphaltum.* In ancient times, such masses of asphaltum or bitumen usually floated in these heavy waters, that they were known as the Asphaltic Lake, *Lacus Asphaltites.* Josephus affirms that "the sea in many places sends up black masses of asphaltum, having the form and size of headless oxen." Diodorus Siculus relates, that the bitumen was thrown up in masses, covering sometimes two or three *plethra* (acres), and having the appearance of islands. The ancients supposed it could not be broken or separated, except by touching it with blood. The bitumen of the Dead Sea was regarded as superior to any other.[2]

In modern times, masses of bitumen are only occasionally found floating in the Dead Sea, at long and irregular intervals. The Arabs on the western coast affirm, that it is thus found only after earthquakes. The only two known recent instances of its appearance seem to confirm this report. After the earthquake of 1834, a large quantity of asphaltum was cast upon the shore near the southwest part of the lake, of which one tribe of the Arabs brought about sixty *kuntârs* (cwt.) to market, and a large amount was purchased by the Frank merchants of Beirût. Again, after the great earthquake of January, 1837, which destroyed Safet, a large mass

[1] Biblical Researches, I. pp. 511, 512, 524 [II. pp. 219, 220, 239].

[2] Joseph. Bel. Jud., 4. 8. 4. Diod. Sic., 2. 48. Plin. Hist. Nat., 7. 13. Tacit. Hist., 5. 6. Dioscor. de re Med., 1. 99.

of bitumen (one said like an island, another like a house) was discovered floating in the sea, and was driven aground on the west side, not far north of Jebel Usdum. The neighboring Arabs swam off around it, and cut it up with axes, so as to bring it ashore. It was carried off by camel loads, and sold for four piasters (about sixteen cents) the *rŭtl* or pound. In this way one tribe received more than five hundred dollars, while others sold to the amount of two or three thousand dollars.

Except in these two instances, the Arab sheikh, who acted as our guide, a man of fifty years old, who had always lived near by, had never known of bitumen appearing in the sea, nor heard of it from his fathers. Seetzen also relates in 1807, that old men told him they remembered its appearance only two or three times during their lives.[1]

The ancients appear to have rightly understood, that the floating masses of bitumen rose from some part of the bottom of the lake. Among the western Arabs, the idea has been current that it came from among the cliffs along the eastern shore. But both the eastern and western shores have now been fully examined, and it is certain that the floating bitumen could only come from beneath the waters. The quarter where the masses of 1834 and 1837 were discovered, would suggest that they had been detached by the shocks from the bottom of the southern bay, which apparently occupies what was anciently the vale of Siddim, with its slime pits or wells of bitumen.[2]

*Character of the Shores.* The parallel chains of mountains which shut in the Ghôr, and between which the Dead Sea lies sunk in its depressed chasm, assume just here an aspect

[1] Biblical Researches, I. p. 517 [II. p. 228]. Seetzen, Reisen, II. p. 372.

[2] Gen. xiv. 3, 10. See above, p. 81.

of unwonted nakedness and desolation, as well as of stern and savage grandeur. Below are the sluggish waters of the Sea of Death, devoid of all life-giving qualities; and above them the naked rocks and cliffs, often perpendicular, tower to the height of twelve hundred and fifteen hundred feet. The view from one of these, overhanging 'Ain Jidy, has already been described.

The body of the mountains is everywhere yellowish limestone, often verging into a dirty white. On the western coast, there is much chalk and marl in various parts. Tracts of low white conical or tent-shaped hills and short ridges occur, of fantastic shape, as if the intervening earth had been washed away by torrents, leaving behind only a bleached skeleton, and presenting the aspect of a frightful desert. Such a tract is seen in the south behind Jebel Usdum; and another on the north of Râs el-Feshkhah.[1] Along the eastern shore there is much sandstone overlying the limestone, as at the mouths of the Wadys el-Môjib and Zerka Ma'în, and further north; also beds of marl; and in the northern part blocks of basalt, and lava of every form and variety.[2]

The immediate shore of the lake, between the water and the base of the cliffs, is nowhere more than a narrow strip. On the western coast, the cliff el-Mersed, just north of 'Ain Jidy, juts out into the sea, and admits of no passage around it, except when the water is very low; and then only with difficulty.[3] There is also no passage around Râs el-Feshkhah. With these two exceptions, there is a strip of land at

[1] Biblical Researches, I. p. 534, II. p. 103 [II. pp. 253, 475].

[2] Anderson's Report, pp. 188–194. Seetzen, Reisen, II. p. 369.

[3] Seetzen, Reisen, II. p. 239; comp. pp. 257, 258. Biblical Researches, I. p. 506 [II. p. 212].

the base of the cliffs along the whole western coast. On the eastern side, there is a like strand extending from the southern end of the sea to the isthmus of the peninsula. North of the isthmus, the cliffs are understood to rise, for the most part, directly from the water; and no path whatever exists along the immediate shore. Seetzen, in 1807, travelled on foot from the isthmus northward; but was able to descend to the water's edge only occasionally; as at the mouths of the Môjib and Zerka Ma'în.[1]

The southern shore is an extensive flat or salt marsh, setting far up towards the line of the Akrabbim or Scorpion Cliffs. This marsh is regarded by the Arabs as impassable; and they travel only along the edge of the lake, or at the base of the said cliffs. So nearly is this tract a dead level, that Lynch's boats, drawing only six inches of water, were unable to approach within half a mile of the southern extremity.[2] At the north end of the sea the land is somewhat higher, forming a level tract a few feet above the water, varied only by a few slight swells. The surface of this plain is everywhere a dust like ashes; and is covered with a thin, smooth, nitrous crust, through which the feet of men and horses break, and sink up to the ankles.[3]

The belt lying between the water and the high-water mark along the shore, has already been described, as seen from the cliffs above. It extends all around the lake, including the shores of the peninsula, except along the flat at the south end, and the cliffs in the northeast part; and gives to the whole the appearance of some great estuary or bay at the time of ebb-tide.[4]

[1] Seetzen, Reisen, II. pp. 363–373.

[2] Anderson's Geological Report, p. 182.

[3] Biblical Researches, I. pp. 534, 555 [II. p. 254].

[4] See above, p. 211.

Along the lower shore or strand, various minerals are occasionally picked up in small quantities. Bits of bitumen are sometimes, though rarely, found. Sulphur is oftener met with on various parts of the shore and peninsula, in pieces as large as an English walnut. The Arabs report that it is found in the sea, near 'Ain el-Feshkhah, in lumps as large as a man's fist; and they collect enough to make from it their own gunpowder. As this spot is nearly opposite the hot springs of Callirrhoë, which deposit much sulphur, may it not, perhaps, in part, be brought down from thence by the stream into the sea? Small lumps of nitre are also picked up; and larger pieces or balls of pumice-stone are found along the western shore, coming doubtless from the lava districts on the northeast coast.[1]

Back of the strand, we have in the south the masses of fossil salt in Jebel Usdum; and on the eastern shore, south of the isthmus, Seetzen saw blocks of most beautiful breccia and conglomerate, composed of granite, jasper, grünstein, feldspath, of various colors; as also blocks of jasper of a dark olive green, etc. All these he supposes to have been brought down by torrents from the ravines of the mountain.[2] In the hills on the northwestern quarter of the sea, is found the famous *stink-stone*, or 'stone of Moses,' as the Arabs call it, a bituminous limestone which partially ignites in the fire and emits a bituminous smell. It receives a high polish; and is much used in Jerusalem and Bethlehem for the manufacture of rosaries and other trinkets and small articles, which are largely purchased by the pilgrims. The chief locality of this mineral is around Neby Mousa, and the neighboring Wady

[1] Biblical Researches, I. p. 512 [II. p. 221]. Anderson's Report, pp. 160, 176.

[2] Seetzen, Reisen, II. p. 354. Comp. Irby and Mangles, p. 109.

Kuneitirah, on the way from the north end of the Dead Sea to Mâr Sâba.[1]

Along the western shore there is much drift-wood, mostly lying at high-water mark, several feet above the ordinary level of the sea. Trunks of large trees are sometimes seen. They come partly from the Jordan as it washes away its banks; and partly are brought down by torrents from the ravines of the adjacent mountains.[2]

*The Peninsula.* The most conspicuous feature of the Dead Sea, as one looks down upon it from the western cliffs, is the long, low, narrow peninsula, which occupies about the middle of the southern half of the lake, and is joined to the eastern shore by a broad and lower isthmus. The western line of the peninsula, between its northern and southern points, is nearly straight, and about ten geographical miles in length. The distance from the head of the northern bay to the northern point, is about five geographical miles. The breadth of the isthmus lying between the southern half of the peninsula and the shore from north to south, is about the same; while from the middle of the western side to the eastern shore, or base of the mountains, is also about five geographical miles.

The direction of the peninsula is nearly from N. N. E. to S. S. W., so that the northern point is twice as distant from the western shore as the southern point; the former being about five geographical miles, and the latter about two and a half. This forms the strait, or narrowest part of the sea, connecting the deep northern portion with the shallower southern bay.

As seen from the western cliffs, the peninsula appears as a

[1] Anderson's Geological Report, pp. 155, 159.

[2] Seetzen, Reisen, II. p. 241. Biblical Researches, I. p. 507 [II. p. 213].

long, low sand-bank. This however is not its real nature. From north to south a steep white ridge runs like a spine along its whole length. This ridge presents steep, sloping sides, seamed and furrowed into deep hollows by the rains, and terminating at the summit in sharp triangular points, standing up like rows of tents ranged one above another. The whole is of a substance apparently partaking of the mixture of soft and broken chalk and slate, and is wholly destitute of vegetation. The height of the ridge varies from ten to about thirty feet above its base, becoming gradually lower towards its northern extremity. The opposite sides of the cliff present the same general appearance, and are of equal height; while adjacent to the isthmus it spreads out into broader table-land. The elevation above the water is from forty to eighty feet.

The peninsula itself is an accumulation of post-tertiary deposits disposed horizontally. The beds of which it consists are chiefly a friable carbonate of lime, intermixed with sand and sandy marls. Fossil salt occurs in small quantities; and the few minerals picked up along the strand are similar to those found along the western shores, such as bits of bitumen, small lumps of sulphur and nitre, and balls of pumice-stone, etc. Salt is also deposited by the water on the shore of the northern bay.[1]

The surface of the isthmus proper is lower; it is well watered, and exceedingly fertile. Directly upon it issues the brook from Wady ed-Dera'ah, coming down from Kerak; its channel goes to the north bay, but several canals are led from it for the purposes of irrigation. This brook Irby and Mangles found flowing in June, though Lynch saw it dry

[1] Irby and Mangles, pp. 138–140. Anderson, Geological Report, pp. 184–187. Biblical Researches, I. p. 520 [II. p. 232]. See above. pp. 218, 224.

early in May. Another more permanent stream comes down further north from Wady Beni Hamâdy into the north bay; and this too is used for irrigation. Portions of the isthmus are cleared and cultivated; the rest is scattered over with thickets of shrubs and trees. Among these are acacias (Seyâl and Tŭlh), the Dôm or Nŭbk, the Zŭkkûm, etc. Further north, towards the bay, are tamarisks and a cane-brake or jungle. On the isthmus, in the heart of the thicket, and not visible in any direction beyond a few yards, is the miserable village of the Ghawârineh, who cultivate this tract. It is called el-Mezra'ah; and the isthmus around bears the name of Ghôr el-Mezra'ah.[1]

It is singular, that no mention of this peninsula has come down to us from antiquity; not an allusion to it occurs, so far as known, in any ancient writer. The same is true of the historians of the crusades; though some of them must have passed through this region. Seetzen is the earliest traveller who reports the peninsula. He first saw it in the spring of 1806, from the western mountains, and took it for an island; but a year later he visited it, and entered it upon his map, though not in its true form. This map was published by Zach, and again by Klöden in 1817.[2] In the year 1818, Irby and Mangles (with Messrs. Banks and Legh) travelled from Hebron around the south end of the sea, and so by way of the isthmus to Kerak; and again, on returning from Petra, they descended from Kerak to the peninsula, and traversed the whole of it. To them we are indebted for the first published

[1] Seetzen, Reisen, II. pp. 350–352. Irby and Mangles, p. 138. Lynch, Narrative, p. 352.

[2] Seetzen, in Zach's Monatl. Corresp. XVIII. p. 438. Reisen, I. p. 429. Reisen, II. pp. 350–352. The map was published in Zach's Monatl. Corresp. Vol. XXII.; also reduced in Klöden's Palaest., Berlin, 1817.

account of this remarkable feature of the Dead Sea.[1] Later travellers, and especially the United States' Expedition, have delineated the ordinary form of the peninsula; but its outline necessarily differs considerably in different seasons, according to the higher or lower state of the water in the lake.

A second and very small peninsula, or low projection, is found on the northwest quarter of the Dead Sea, nearly three miles west of the mouth of the Jordan. It is a gravelly point with large stones upon it, connected with the main shore by a low narrow neck. The whole has much the appearance of a wharf or pier. When the sea is full, the water overflows this isthmus; and then the peninsula presents the appearance of an island. As such it has been reported by travellers.[2]

Besides mistaking these peninsulas for islands, travellers have sometimes been deceived by dark shadows resting on the water. Irby and Mangles were several times thus deceived. Once, when near Rabbath Moab, on the eastern mountains, they saw, at sunset, a dark shade resting on the sea, which assumed so exactly the appearance of an island, that they did not doubt of it, even after looking through a telescope.[3] We ourselves, in descending the western cliffs to 'Ain Jidy, saw near the opposite shore and north of the peninsula, what seemed to be another long, dark-colored shoal or sand-bank. On looking further, however, it proved to be a spot of calm, smooth water, around which the rest of the sea was covered with a ripple; and the dark-brown eastern mountains, being reflected in this mirror, gave to

[1] Travels, pp. 109, 138–140.

[2] Biblical Researches, I. p. 534. Lynch, Narrative, p. 270. Lands of the Moslem, p. 280. Doubtless the island reported by Warburton, Crescent and the Cross, II. p. 280; and by Wilson, Lands of the Bible, II. p. 21.

[3] Travels, p. 141.

it their own color. Yet, for the moment, the illusion was complete, that a long, dark yellow sand-bank or island lay before us.[1]

*The Ford.* Seetzen, in 1806, was the first to learn from the Arabs of the eastern mountains, that a ford existed in the Dead Sea, leading from the southern extremity of the peninsula across to near the northern end of Usdum, not far from the heap of stones called Um Zôghal. This ford was said to be available only when the water of the lake was very low; and had, at that time, not been used for several years, on account of the depth of the water. It is marked on his map. Burckhardt, in 1812, heard a similar, but less definite report. The Arab Sheikh who was our guide in 1838, affirmed that he had himself crossed by the same ford many years before; although now, and for several years, the water was too deep to be forded.[2]

Irby and Mangles relate, that in descending from Kerak to the peninsula, in 1818, they fell in with a small caravan going to Hebron by way of the ford; and while the travellers were examining the northern part, this caravan crossed the peninsula to the strait, which they forded. The travellers soon after arrived at the same point; saw the ford "indicated by boughs of trees;" and observed the caravan just landed on the opposite side. The width of the strait they judged to be a mile; and as there were asses in the caravan, the depth could not be very great.[3]

We thus have testimony to the existence of two fords, where the water of the sea is low. Lynch, in 1848, took

[1] Biblical Researches, I. p. 504 [II. p. 208].

[2] Seetzen, Reisen, II. p. 358. Burckhardt, Syria, p. 394. Biblical Researches, I. p. 521 [II. p. 235].

[3] Travels, p. 140.

soundings in search of both ; but found neither. Yet on his map the lines of the two fords, as laid down by Seetzen and on our map, exhibit no figures or marks of soundings.[1]

All this furnishes another indication that the waters of the Dead Sea were higher in 1848 than they were in 1838; and, further, that in 1818, when Irby and Mangles were there, the lake was at its lowest point of ebb. At that time the breadth and depth of the strait were so greatly diminished, as to leave it fordable. Nor is this surprising; for, as we have seen, the level of the sea varies from ten to fifteen feet in different years and different seasons. This variation depends on the fluctuations of the rainy seasons, and the amount of water which falls annually along the upper valleys and basins of the Jordan, and on the mountains and deserts in the south as far as to the gulf of 'Akabah.[2]

*Navigation and Exploration.* There is only the slightest historical evidence, that in ancient times the Dead Sea was ever navigated. Josephus, whom Tacitus likewise copies, in his fabulous account of the asphaltum, speaks of it as being gathered into boats ; but these might perhaps be regarded as a feature of the fable.[3] Josephus also relates that the Moabites and Ammonites, in coming to make war upon king Jehoshaphat, pitched at En-gedi, after *passing* (διαβάντες) the lake ; but this might be *around* the lake, or by the ford, and does not necessarily imply the passage of an army in boats.[4] Again, the same writer informs us that Placidus, who had pursued the routed Jews from Gadara to the Asphaltic lake, placed soldiers in boats in order to de-

[1] Lynch, Official Report, pp. 35, 36.

[2] See above, p. 209.

[3] Joseph. Bel. Jud., 4. 8. 4. Tacitus, Hist., 5. 6.

[4] Joseph. Antiq., 9. 1. 2. Comp. 2 Chron. xx. 1, 2.

stroy those who took refuge in the lake.[1] Now these may have been slight boats or rafts got up for the occasion; or, at most, they may have been skiffs on the Jordan belonging to the towns Abila, Julias (Livias), and Besimoth, which lay east of the Jordan near its mouth, and are mentioned in the same connection. No other ancient notice is known to exist; and the above, at any rate, do not indicate any frequent or permanent navigation of the lake.

About the middle of the twelfth century, we find a notice of like import in the Arabian geographer Edrisi. In speaking of the Dead Sea, he says: "One sees these small craft intended to transport provisions and fruits from Zoar and Darah (perhaps Wady Dera'ah) to Jericho and other places of the Ghôr."[2] Obviously Edrisi here speaks only from report.

The first to navigate the Dead Sea in modern times, was Costigan, an Irish traveller, who, in July, 1835, had a small boat carried over from the seacoast to the lake of Tiberias; and, with his Maltese servant, descended the Jordan to the Dead Sea, as has been already related. He would seem not to have proceeded further than the peninsula; but returned exhausted to the northern shore; and was carried up to Jerusalem to die. This was the sad and only result of his voyage.[3]

He was followed, in March, 1837, by Messrs. G. H. Moore and W. G. Beke. They transported a light boat from Yâfa across the mountains, intending to survey the sea, and examine scientifically its peculiar features. After visiting vari-

[1] Joseph. Bel. Jud., 4. 7. 6: *τοὺς εἰς τὴν λίμνην καταφευγόντας.* Comp. Reland, Palaestina, p. 252.

[2] Edrisi, par Jaubert, I. p. 338.

[3] Biblical Researches, I. p. 229 [I. p. 337]. See above, p. 169.

ous points on the lake, and making experiments in respect to the boiling point of water, they were led, on account of various obstacles, to discontinue their labors; which were never resumed. The only result of their enterprise yet made known to the public, is the earliest discovery of the depression of the Dead Sea; which they supposed to be about five hundred feet.[1]

Hardly more successful was the enterprise of Lieut. Molyneux; who, after descending the Jordan, entered upon the Dead Sea in the first days of September, 1847. He went as far south as the neighborhood of the peninsula; took three deep soundings; and, returning to the northern end, proceeded to Jerusalem; but died soon after reaching his ship. A full account of his voyage has already been given.[2]

The United States' Expedition, under the command of Lieut. Lynch, after descending the Jordan with two metal boats, entered the Dead Sea, April 18, 1848, and continued on its shores until May 10; in all, twenty-two days. The main objects of attention were: 1. The depth and depression of the sea; the former determined by many lines of soundings; and the latter by an engineer's level carried over to the Mediterranean. 2. The form and extent of the lake, its geographical position, and the character of the shores; for which purposes the whole line of coast was visited, and many topographical sketches taken. 3. The character of the waters, and the mineral substances found in connection with the lake. 4. The temperature of the atmosphere, and its various changes, etc. etc.

The examination was everywhere careful and thorough; and so complete, that a like investigation will hardly be

[1] Journal of Royal Geograph. Soc., VII. p. 456.

[2] See above, pp. 169, 170.

required for many years to come. A general account of the Expedition has already been given above.[1]

*Destruction of Sodom.* With the Dead Sea is naturally connected some reference to the catastrophe of Sodom and the other cities of the plain.

It was a plausible idea which formerly prevailed, that the Jordan, of old before the catastrophe of the plain, pursued its way through the 'Arabah to the Red Sea at 'Akabah. But the discovery of the great depression of the Dead Sea, as well as of the whole Jordan valley and of a large portion of the 'Arabah further south; the northward inclination or direction of all the lateral valleys along the 'Arabah; and the fact that the water-courses of the high western desert, from a point far south of 'Akabah, all run northwards towards the Dead Sea; — all these circumstances go to show that the configuration of this region, in its main features, is coeval with the present condition of the surface of the earth in general; and not the effect of any local catastrophe at a later period. It follows, that the Dead Sea existed in its deep chasm, as the terminus of the Jordan, long before the historic period.

It seems, too, to be a necessary conclusion that the Dead Sea anciently extended no further south than the peninsula; and that the cities destroyed lay on the south of the lake as it then existed. Lot fled from Sodom to Zoar, which was *near;*[2] and Zoar, as we know, was in the mouth of Wady Kerak, as it opens upon the neck of the peninsula. The fertile plain, therefore, which Lot chose for himself, where Sodom was situated, and which was well watered like the land of Egypt, lay also south of the lake, "as thou comest to

[1] Lynch, Official Report, p. 42. See above, pp. 170, 171.

[2] Gen. xix. 20.

Zoar."[1] Even to the present day, more living streams flow into the Ghôr, at the south end of the sea, from Wadys of the eastern mountains, than are found so near together in all Palestine besides. Tracts of exuberant fertility are still seen along these streams; as on this isthmus and around es-Sâfieh; though elsewhere the district around the southern bay is mostly desert.

In the same plain were slime pits, that is, wells or fountains of bitumen or asphaltum, which appear to have been of considerable extent. The tract in which they were immediately situated is called the vale of Siddim, probably a depression in the plain; but it was adjacent to the Salt Sea, and was at least near to Sodom and Gomorrah.[2] The streams that anciently watered the plain, still attest the accuracy of the sacred historian; but the pits of asphaltum are no longer to be seen. Did they disappear in the catastrophe of the plain?

To this question various circumstances suggest an affirmative reply. In the lapse of centuries the accumulations of bitumen around the fountains and in layers, perhaps beneath the soil, had of course become great. We read, that "the Lord rained upon Sodom and upon Gomorrah brimstone and fire from the Lord out of heaven; and he overthrew those cities and all the plain;" so that "the smoke of the country went up as the smoke of a furnace."[3] This narrative is readily explained by supposing that in a tempest of thunder and lightning, the accompaniments perhaps of an earthquake or of some volcanic action, or of both, these masses of bitumen were ignited by the lightning, and a conflagration produced which not only destroyed the cities, but also consumed and scooped out the surface of the plain

[1] Gen. xiii. 10, 11. [2] Gen. xiv. 2, 3, 10. [3] Gen. xix. 24, 25, 28.

itself; so that the waters of the lake, rushing in, spread themselves out over the once fertile tract. This hypothesis is rendered more probable by the fact, that while the northern part of the lake has a depth of more than thirteen hundred feet, the southern bay is nowhere more than twelve or thirteen feet deep; and also by the circumstance that the masses of asphaltum still occasionally thrown up, appear to come from this southern portion of the sea. In this miraculous overthrow of the plain and its cities, Zoar, though near, yet lying quite at the base of the eastern mountains, was readily spared.[1]

Such, we may suppose, was the method of God's judgment when, "turning the cities of Sodom and Gomorrah into ashes, *he* condemned them with an overthrow, making them an ensample unto those that after should live ungodly."[2]

That the southern bay of the sea does now thus occupy the place of the vale of Siddim and the fertile plain, appears further also from the language of the sacred writer, speaking of "the vale of Siddim, which is the Salt Sea." Josephus, likewise, referring doubtless to the same passage, says expressly, that "upon the destruction of the city of Sodom, that vale [of Siddim] became the Lake Asphaltitis."[3] He elsewhere speaks of the *country* of Sodom as bordering on the lake; of old, he says, it was a prosperous land, but being burnt with lightning, it is now scorched throughout. This account applies well to Usdum; the salt from which, as also from the shore, was well known among the ancients by the name of *salt of Sodom*.[4]

[1] Gen. xix. 20, 22. See Biblical Researches, II. pp. 187–192 [II. pp. 601–608].

[2] 2 Pet. ii. 6.

[3] Gen. xiv. 3. Joseph. Antiq., 1. 9. Comp. Bel. Jud., 4. 8. 4.

[4] Joseph. Bel. Jud., 4. 8. 4. Galen de Simpl. Med. Fac., IV. p. 19. Reland, Palaestina, p. 243.

*Apples of Sodom.* To this same region belong likewise those far-famed fruits

> "which grew
> Near that bituminous lake where Sodom stood."

Josephus, after speaking of the conflagration of the plain, as above, and the yet remaining tokens of the divine fire, goes on to say, that "there are still to be seen ashes reproduced in the fruits; which indeed resemble edible fruits in color, but on being plucked with the hands, are dissolved into smoke and ashes."[1] On arriving at 'Ain Jidy, in 1838, one of the first objects that attracted our attention, was a tree with singular fruit, which at once suggested to our minds the famous apples of Sodom. This was the 'Ösher of the Arabs, the *Asclepias gigantea* v. *procera* of botanists; which is found in Arabia Felix and also in Upper Egypt and Nubia; but appears to be confined, in Palestine, to the borders of the Dead Sea. There are several trees at 'Ain Jidy; and they are frequent and of large size on the isthmus of the peninsula, and at the south end of the lake.[2]

The trees which we saw at 'Ain Jidy were six or eight inches in diameter, or from a foot and a half to two feet round; the height being from ten to fifteen feet. The tree has a grayish, cork-like bark, with long, oval leaves; and, in its general appearance and character, might be taken for a gigantic perennial species of the milk-weed or silk-weed of the northern American States. Its leaves and flowers are very similar to those of the latter plant; and when broken off, it in like manner discharges copiously a milky fluid. The fruit resembles externally, a large, smooth apple or orange, hanging in clusters of three or four together; and

[1] Joseph. Bel. Jud., 4. 8. 4. Comp. Tacitus, Hist., 5. 6.

[2] Irby and Mangles, pp. 108, 138.

when ripe is of a yellow color. It was, at that season, fair and delicious to the eye, and soft to the touch; but on being pressed or struck, it exploded with a puff, like a bladder or puff-ball, leaving in the hand only the shreds of the thin rind and a few fibres. It is indeed filled chiefly with air, like a bladder, which gives it the round form; while in the centre a small slender pod runs through it from the stem, and is connected by thin filaments with the rind. The pod contains a small quantity of fine silky fibres with seeds; precisely like the pod of the silk-weed, though hardly a tenth part so large. The Arabs collect the silk, and twist it into matches for their guns.

Comparing now the above account of Josephus, and making due allowance for the marvellous in all popular reports, we find in it nothing which does not apply almost literally to the fruit of the 'Ösher, as here described. It is very delicate, and must be handled with great care. We attempted to carry some of the boughs and fruit to Jerusalem; but without success.[1]

[1] Biblical Researches, I. p. 522 [II. p. 235]. Seetzen, in Zach's Monatl. Corresp., XVIII. p. 442. Reisen, II. p. 231 sq. Irby and Mangles, p. 450. Comp. Brocardus, c. 7. p. 180. Fulcher Carnot., in Gesta Dei, p. 405.

## SECTION III.

### FOUNTAINS.

We have already referred to the description of the Promised Land given by Moses to the children of Israel: "For the Lord thy God bringeth thee into a good land, a land of brooks of water, of Fountains and depths that spring out of valleys and hills." [1] This was spoken in contrast to the land of Egypt, where there are no fountains nor brooks; while Palestine, in comparison, is truly a country well watered with living springs on its hills and in its valleys. But Moses was not comparing the Land of Promise with other mountainous or more occidental regions, where fountains and streams are sometimes still more abundant and lasting.

Thus it has happened, that sojourners and travellers from the west, from Italy, Germany, and England, have often been struck with the penury of living waters in Palestine and the apparent infrequency of fountains in the parts visited by them. Jerome, coming from Dalmatia and Italy, and sojourning in Bethlehem, writes: "In these places where we now dwell, except small fountains, all the water is from cisterns; and if divine wrath should suspend the rains, there is more danger of thirst than of famine." [2] In like

[1] Deut. viii. 7. See above, p. 142.

[2] Hieronymus, Comm. in Amos iv. 7: "In his enim locis inquibus nunc elegimus, praeter parvos fontes omnes cisternarum aquae sunt; et si imbres divina ira suspenderit, magis sitis quam famis periculum est."

manner Rosenmueller dwells on the scarcity of living waters in the Holy Land; and refers to the traveller Korte, who found only eight or ten copious fountains in the whole country; and the streamlets from these did not flow for more than eighty or a hundred paces.[1] This testimony is doubtless true, as to what Korte himself saw; and probably there have been travellers who have seen still fewer fountains. It is also true, that the streams from many fountains become dry in summer, like the beds of the winter-brooks; and that the smaller fountains themselves sometimes disappear during the summer season, in consequence of the long absence of rain. Still, it will not be hard to show that the language of Moses above quoted is entirely correct, as to the many fountains of Palestine as compared with Egypt.

There are, in the Old Testament, quite a number of cities which take their names from fountains in or near them; in the English Version, the Hebrew *'Ain* (fountains) is given by *En.* Thus we have *En-gedi*, now 'Ain Jidy, with its noble fountain; *En-gannim*, now Jenîn, with a fountain equally noble; *En-dor*, opposite Tabor; also *En-gannim*, in Judah, not yet identified;[2] *En-haddah* in Issachar, not yet identified, but apparently not far from En-gannim;[3] *En-hazor*, not yet identified, but named with Hazor and Kedesh of Naphthali; and probably not far from the Hûleh;[4] *En-mishpat*, or Kadesh-barnea; *En-eglaim*, not yet identified.[5] Further, the word *'Ain* itself stands as the name of a city in Simeon, not yet identified.[6] We find likewise *Anem*, 'two fountains,' a city of Issachar, the same with En-gan-

[1] Rosenm., Bibl. Geograph., II. i. p. 214. Korte, pp. 139, 378.
[2] Josh. xv. 34.
[3] Josh. xix. 21.
[4] Josh. xix. 37.
[5] Ezek. xlvii. 10.
[6] Josh. xxi. 16; 1 Chron. iv. 32.

nim ;[1] also *Enam* and *Anim*, both signifying 'two fountains,' and both in Judah ; the first not yet identified, and the latter probably now el-Ghuwein.[2] In the New Testament, the name *Enon*, where John was baptizing, is a plural form, signifying 'fountains ;' where, of course, there was much water for the supply of the multitudes.[3]

Scripture also speaks of several fountains bearing their own proper names, or else named from an adjacent place. Such are *En-shemesh*, on the border of Judah and Benjamin, not improbably the present 'Ain el-Hand, in Wady el-Hand, half an hour east of Bethany, known also as the fountain of the apostles ;[4] *En-Rogel* and *Siloam*, in the valley of Jehoshaphat ; *En-Hattanin* (Engl. Dragon-well), perhaps the same with Gihon, on the west of Jerusalem ;[5] *En-Harod* (Engl. well of Harod), in the valley of Jezreel, perhaps a place of fountains and mills, east of 'Ain Jâlûd ;[6] *En-tappuah*, belonging to the city Tappuah.[7] There are also mentioned : a fountain at Jezreel, now 'Ain Jâlûd ;[8] one at Jericho, where Elisha healed the waters, now 'Ain es-Sultân ;[9] and the 'fountain of the water of Nephtoah,' on the border between Judah and Benjamin, west of Jerusalem, now probably 'Ain Kârim.[10] Josephus also speaks of springs at Etam, now Ŭrtâs, with its fine fountain ;[11] and mentions likewise the fountain of Capernaum.[12]

[1] 1 Chron. vi. 73 [58] ; comp. Josh. xix. 21, xxi. 29.

[2] *Enam*, Josh. xv. 34 ; *Anim*, Josh. xv. 50. Comp. Biblical Researches, II. p. 204 [II. p. 625.]

[3] John ii. 23.

[4] Josh. xv. 7, xviii. 17. E. Smith's manuscript Notes.

[5] Neh. iii. 13.

[6] Judg. vii. 1. Later Biblical Researches, p. 338.

[7] Josh. xvii. 7, comp. v. 8.

[8] 1 Sam. xxix. 1.

[9] 2 Kings ii. 21.

[10] Josh. xv. 9, xviii. 15. See above, pp. 45, 46.

[11] 1 Chron. iv. 32 ; 2 Chron. xi. 6. Joseph. Antiq., 8. 7. 3.

[12] Joseph. Bel. Jud., 3. 10. 8.

Besides these fountains, referred to in Scripture, there are, at the present day, very many others, few of which comparatively have been seen or reported by travellers. It is to be regretted, that so little attention has generally been given by travellers, ourselves among the rest, to ascertain the manner in which each village is supplied with water. In the case of many villages, the word *'Ain* now forms a part of the Arabic name, and would, *a priori*, imply the existence of a fountain in every such place. But in many cases of this class, this does not hold true. Thus the ancient *Beth-shemesh* is now 'Ain Shems, but there is no fountain near; at 'Ain Sinai, north of Gophna, there is a well, but no fountain; and at 'Ain Yebrûd, north of el-Bîreh, no fountain is reported. Still, an enumeration of the fountains known to exist in any district, which has been tolerably explored, will serve to show that there are many more of these sources of living water than has usually been supposed.

We take the environs of Jerusalem, in a circuit of eight or ten miles around the city; but not including the fountains of the city itself. Beginning at Beitîn (*Bethel*), on the great road north, we find there two fountains within the limits of the ancient reservoir; and on the way to el-Bîreh (*Beeroth*), there are two more.[1] El-Bîreh has its fountains; and there is one near Jufnah, in the deep valley northwest. Passing now to the west of the great road, there is at el-Jîb (*Gibeon*) a fountain in a cavern; on the hill of Neby Samwîl there are several small sources below the summit on both sides; and Kuryet el-'Enab has also its fountain. Return-

[1] For the fountains here enumerated, the reader is referred, generally, to the Biblical Researches and Later Biblical Researches, Index, *'Ain*, etc.; Tobler's Dritte Wanderung, Index, *'Ain*, etc.; Barclay's City of the Great King, pp. 544–560.

ing to the great valley, Wady Beit Hanîna, we find quite a number of fountains along its sides; as, on the west, at the ruin Beit Tulma, at Kŭlônieh, and at Sâtâf; and, on the east, 'Ain Lifta, 'Ain er-Rawâs, 'Ain Kârim (*Nephtoah*), 'Ain el-Habîs (St. John's in the Desert), one at Khirbet el-Lauz, and 'Ain Shukâf below Sâtâf. Passing from Jerusalem down Wady el-Werd, we find 'Ain Yâlo, 'Ain Hanîyeh (St. Philip's), one at Welejeh, and the copious source at Bittîr; as also one at el-Hûsân on the hills south. Just north of el-Khŭdr is the small source of Hand Kibriyân; above Solomon's Pools is the sunken fountain that feeds them; twenty-five minutes below the same pools is the very copious source at Ŭrtâs; and further south is the small fountain at Beit Fâghâr, the ancient *Phagor* or *Phogor*. On the east of the great road, beginning at the north, we have the large fountain in Wady Fârah, below Hizmeh;[1] 'Ain el-Hand (*Enshemesh*), east of Bethany; a small fountain at Sûr Bâhil; and the fine one at Tekoa.

Here, then, are no less than thirty permanent fountains of living water; some of them large and copious, as at Lifta, 'Ain Kârim, Ŭrtâs, and in Wady Fârah. Several others are reported, but smaller and probably less permanent. Now, while it may be true, that no other district in Palestine has been so fully explored; and therefore it may not be possible, in any other tract of like extent, to name so many fountains; yet the preceding enumeration shows that Moses had sufficient ground to speak of Palestine, in comparison with Egypt, as a land of fountains.

In further speaking of the fountains of Palestine, we name only the more important ones, following our usual order.

[1] Barclay, p. 558.

## I. FOUNTAINS IN OR NEAR THE WESTERN PLAIN.

On the way south from Tyre, after passing Râs el-Abyad, there is a fine source on the shore near the remains of the ancient Alexandroschoene; and after crossing Râs en-Nâkûrah, there are copious fountains at 'Ain el-Musheirifeh near the southern base. At el-Kabîreh in the plain, is the source, whence Jezzâr Pasha supplied water for 'Akka by his aqueduct. Southeast of 'Akka, at the extremity of one of the projecting hills, a fountain furnishes water to the village of Birweh; and there are probably other fountains at the foot of the more northern hills. Still further south, in the plain, are the large fountains at Tell Kûrdâny, driving several mills, and forming the source of the river Na'mân or *Belus*.[1] At the base of Carmel, where it is skirted by the same plain of 'Akka, are the extensive permanent sources of the river el-Mukŭtta', the continuation or perennial lower part of the Kishon.[2]

On the southwestern slope of Carmel, the fertility and beauty of the region would seem to indicate frequent fountains; and a fine one is noted at Um esh-Shukaf.[3] The fact that there are several permanent streams on the north and south of Cesaraea, would also seem to imply fountains along the base of the eastern hills; but none are reported. At Râs el-'Ain, near Mejdel Yâba, northeast of Yâfa, are the great fountains of the river 'Aujeh, already described.[4] At Yâlo (*Ajalon*) is a fountain which supplies the village; and at 'Amwâs (*Nicopolis*) there are two sources of living water:[5]

[1] See above, p. 187.
[2] See above, p. 190.
[3] Van de Velde, Mem., p. 107.
[4] See above, p. 193.
[5] Later Biblical Researches, pp. 144, 146.

The village of Sŭr'ah (*Zorah*) is supplied by a noble fountain, on the low ground, fifteen minutes north; it is walled up square with large hewn stones, and gushes over with fine water, sending a brook down the valley. In 1852 we saw twelve women, each with a jar of water from this fountain on her head, toiling up the steep ascent to the village. In the same manner, in ancient times, the mother of Samson probably bore water from this fountain to her home.[1]

At 'Allâr es-Sifla, east of Beit Nettîf, is a fine fountain, watering a tract of gardens and fruit trees.[2] Another, 'Ain Farîs, exists at Nŭhâlîn, further east.[3]

In all probability there are similar fountains further south, among these lower hills along the plain; but they are not reported.

### II. FOUNTAINS OF THE HILL-COUNTRY WEST OF JORDAN.

*North of the Plain of Esdraelon.* At Kedesh of Naphthali are two copious fountains, one south and the other north of the village. Just below the fortress of Tibnîn, in the north, is 'Ain el-Mizrâb. At some distance from Ramah of Asher is a fountain, from which the village is supplied in summer.[4] Near el-Jish there are small springs; also a large one south of Meirôn; and one is reported at el-Bukeia, west of the mountain.[5]

The large fountain of Seffûrieh is celebrated in the history of the crusades; it is situated nearly half an hour south-

[1] Judg. xiii. 2-24. Later Biblical Researches, p. 153.

[2] Biblical Researches, II. p. 14 [II. p. 340].

[3] Tobler, Dritte Wanderung, p. 115.

[4] Later Biblical Researches, pp. 366, 377. Ibid., p. 57. Ibid., p. 63.

[5] Biblical Researches, II. p. 446 [III. p. 369]. Later Biblical Researches, p. 73. Ibid., p. 76.

east of the village, towards Nazareth; and by it the hosts of the crusaders and of the Muslims alternately encamped.[1] At Nazareth is the small public fountain, which supplies the village; where the females are seen waiting their turn to fill their jars. The source itself is under the Greek church.[2] At Hattîn a fine fountain bursts forth under the western end of the Tell. Within Khân et-Tujjâr there is a spring of water; and a larger fountain exists five or ten minutes further south, which sends a stream of water down the valley.[3]

*In and around the Plain of Esdraelon.* In the northwestern part of the great plain, in passing eastward near the base of the northern hills, several small streams occur, implying fountains on the left. In the plain itself, between Tell Shemmâm and Lejjûn, there are small fountains and marshy tracts on both sides of the Kishon.[4] From Lejjûn northwestward, Dr. Eli Smith travelled in 1844, near the base of the hills on the left; he crossed several small streams and saw two or three copious fountains, the names of which he did not learn.[5]

At Sôlam (*Shunem*), on the western end of Little Hermon is a small fountain. In the upper part of the valley of Jezreel are two or three large ones, sending forth the stream which flows down that valley. One rises just under the rocky wall below Zerîn (*Jezreel*), and supplies that place; it is called 'Ain el-Meiyiteh. Twenty minutes further down the valley is 'Ain Jâlûd, a very large fountain, flowing out from under a sort of cavern in the wall of conglomerate rock, which

[1] Biblical Researches, II. p. 345 [III. p. 203]. Later Biblical Researches, p. 112.

[2] Biblical Researches, II. p. 336 [III. p. 188].

[3] Biblical Researches, II. p. 378 [III. p. 249]. Ibid., II. p. 369 [III. p. 236].

[4] Later Biblical Researches, pp. 115, 116.

[5] Manuscript Journal.

here forms the northern base of Mount Gilboa. The water is excellent, and spreads out at once into a fine limpid pool, forty feet or more in diameter, in which are great numbers of small fish. From this reservoir, a stream sufficient to turn a mill flows off eastward down the valley. This is, no doubt, the ancient 'fountain in Jezreel,' where Saul and Jonathan pitched before their last fatal battle; and where, too, in the days of the crusades, Saladin and the Christians successively encamped.[1] About an hour further east are two fountains, one on each side of Tell Sheikh Hasan, near the mountain; that on the west, called er-Rahhânîyeh, is the largest, and sends a mill-stream down the valley to join the Jâlûd.[2]

On the southern side of the great plain, are several fountains. One is at Jenîn, having its source in the hills back of the place, and is brought down so as to issue in a noble stream in the midst of the village. It is built up with plain but good masonry; and the water flows off northwest towards the Kishon.[3] There is also the fountain of Lejjûn, a short distance southwest of the ruins; which sends down a stream, at first eastwardly, with several mills upon it. The brook then passes off into the plain, where it goes to join the Kishon, of which it is the largest arm.[4]

*South of the Plain of Esdraelon.* At the southern base of Tell Dothân, in the plain of Dothan, is a fountain, called el-Hŭfîreh.[5] There is likewise a fine one at Jeba'; and several smaller ones near the village of Fendekûmieh.[6]

The city of Nâbulus (*Shechem*) is more abundantly watered

[1] 1 Sam. xxix. 1. Biblical Researches, II. pp. 323, 324 [III. pp. 167, 168].

[2] Later Biblical Researches, p. 338. Van de Velde, Memoir, p. 139.

[3] Biblical Researches, II. p. 315 [III. p. 154].

[4] Later Biblical Researches, p. 112.

[5] Later Biblical Researches, p. 122.

[6] Biblical Researches, II. p. 312 [III. pp. 150, 151].

by fountains and wells of living water, than any other spot in Palestine. Besides the three fountains east of the town, near the mouth of the valley, the inhabitants boast of not less than *eighty* overflowing springs in and around the city. Very many of these, probably, are nothing more than smaller branches from larger fountains, brought down by underground conduits to particular points of the city. In several of the streets water is constantly flowing. The water of all the fountains in and just around the city runs westward towards the Mediterranean; and forms a brook with many mills along the valley; which late in April, 1852, was flowing as far as to 'Anebta.[1]

The main fountain within the city is 'Ain el-Kariûn, which issues from under an ancient vault, to which there is a descent by a long flight of steps. The water is carried by subterranean channels to several of the mosques, and many private houses. The water of this and the other city fountains are again collected in the western part of the town, where they drive a mill both in summer and winter, and then go to water the gardens west of the city.

Outside of the city of Nâbulus there are on the south three copious fountains, Râs el-'Ain, 'Ain el-Murasrasu, and 'Ain el-'Asal; the two former upon the skirts of Gerizim, in or near the ravine which here comes down from the mountain; the latter lower down, among the gardens in this quarter. West of the city are 'Ain el-Kasab, in the bottom of the valley near the western gate; 'Ain Beit Ilma fifteen minutes further west at the base of Ebal; and a smaller fountain at Râfîdia.

All these fountains belong to the western slope of the

[1] For an account of the fountains in and around Nâbulus, see Rosen, in Zeitschr. der Deutschen morg. Gesellschaft, 1860, XIV. p. 636 sq.

watershed of the valley, on which Nâbulus is situated. The abundance of water has given occasion for extensive gardens and orchards on the south and west of the city, comprising a great variety of vegetables and fruits, and presenting a scene of luxuriant verdure elsewhere unparalleled in the Holy Land.

East of the city the ground slopes eastward, and is at first hard and stony, and planted with olive trees. Twenty minutes from the city is 'Ain Defneh, gushing up in the middle of the valley, furnished with a reservoir, surrounded by a garden of four or five acres, and sending forth a stream large enough for a mill. In the village Belâtah, half an hour below the city and in the southern part of the mouth of the valley, is a large fountain, 'Ain Belâtah, hardly a bow-shot distant from Jacob's well; it is very copious, and its stream turns a mill just below. 'Ain 'Askar belongs to the deserted village 'Askar on the southeast corner of Ebal, also about half an hour distant from Nâbulus. This fountain is smaller; the water issues from a long low vault running in under Ebal, and flows into a broken reservoir. The vault and reservoir are of ancient workmanship. The water of all these three fountains goes to join the water-bed of the plain Mŭkhna, which runs northward to Wady Fâri'a, and so to the Jordan.[1]

Beyond the Mŭkhna, in the northwestern part of the little plain which there runs up eastward, is the village of Sâlim, with two sources of living water; one in a cavern, and the other a running fountain called 'Ain Kebîr, 'the great fountain.'[2] Further southeast beyond the hills is the small source called 'Ain Yânûn; and at Daumeh, near the brow

[1] On all these fountains see Rosen, as referred to in the preceding note.

[2] Later Biblical Researches, p. 298.

of the Jordan valley, is a village fountain.[1] Near Deir Estieh, southwest of Nâbulus, several fountains spring up in the bottom of Wady Kânah, which is there wide and cultivated.[2] At Khân el-Lubban on the great northern road is a fine fountain and stream; and near Serlûn (*Shiloh*), not far southeast, is likewise a living spring.[3] Proceeding on the great road towards Jerusalem, we find the small source 'Ain el-Haramîyeh, two hours north of el-Bîreh.[4]

We come now to the fountains, thirty in number, already enumerated, within eight or ten miles of the Holy City; extending from Beitîn and el-Bîreh in the north to Tekoa and Beit Fâghŭr in the south.[5]

Further south few fountains are known, except on and just around Hebron. Two hours north of Hebron, by the side of the great road, near Beth-zur, is the small fountain ed-Dirweh, which an early tradition reports as the place of Philip's baptism of the eunuch; just by it are the remains of an ancient church.[6] An hour west of Hebron, on the way to Dûra, is the small fountain 'Ain Nunkur, and another place of springs beyond. These waters are collected and conducted to the valley north, where they issue from a subterranean channel, and are used to irrigate gardens. 'Ain Nunkur is a little east of south from Dewirbân (*Debir*), and may have some relation to the "upper and nether springs," which Caleb gave to his daughter.[7] East of Dewirbân in Wady el-Jôz is another small spring, 'Ain el-Bassa.

[1] Later Biblical Researches, pp. 293, 297.

[2] Later Biblical Researches, p. 135.

[3] Biblical Researches, II. pp. 269, 271 [III. pp. 86, 90].

[4] Porter's Handbook, pp. 327, 328.

[5] See above, pp. 241, 242.

[6] Acts viii. 38 sq. Later Biblical Researches, p. 277.

[7] Josh. xv. 19. Biblical Researches, II. p. 213 [III. p. 2]. Rosen, in Zeitschr. der Deutschen morg. Gesellschaft, XI. p. 56.

In Hebron itself and its immediate vicinity, Rosen marks on his Plan no less than twelve fountains, mostly small, but some of them tolerably copious. Such are, 'Ain el-Jedîd on the hill west of the town, an unfailing spring of fine water in a vault of ancient masonry, to which there is a descent by steps;[1] 'Ain el-Kashkaleh just out of the city on the north, the waters of which are carried by pipes to the Haram;[2] 'Ain Sâra further north, near the Jerusalem road; and 'Ain Kenâ'a, still more to the north and northwest, near Khŭrbet en-Nŭsârah.[3]

In spite of its many living fountains, it would appear that Hebron was dependent to a great extent on its rock-hewn cisterns. Many of these still remain, and some are of great extent.

### III. FOUNTAINS IN AND NEAR THE GHÔR.

The great fountains of the Jordan at Hâsbeiya, Tell el-Kâdy, Bâniâs, and elsewhere, have already been described. The region of the Ghôr has been, perhaps, less fully explored than any other part in respect to its sources of water; and many springs doubtless exist, which have never been reported. The main fountains burst forth at the foot of the mountains on each side of the Ghôr.

*West of the Jordan.* On the west side of the basin of the Hûleh, several fountains issue at the foot of the hills; the streams from which run into the marsh. That called 'Amûdîyeh is of considerable size; but 'Ain Belâteh is much

[1] Rosen, in Zeitsch. der Deutschen morg. Gesellschaft, XII. p. 480. Biblical Researches, II. p. 74 [II. p. 433].

[2] Rosen, in Zeitsch. der Deutschen morg. Gesellschaft, XII. p. 481. Not 'Ain *Eskali*, as Van de Velde has it, from which he makes out the ancient name *Eshcol*. See above, p. 121.

[3] Rosen, in Zeitsch. der Deutschen morg. Gesellschaft, XII. pp. 485, 486.

larger, half an hour further south, and an hour north of Mellâhah.[1] At the latter spot, 'Ain el-Mellâhah is quite large, and forms a pool of a hundred feet or more in diameter, the water from which drives several mills, and flows to the lake at its northwestern corner, perhaps a mile distant. The water is brackish, and slightly warm.[2]

At several of the villages lying along on the side of the western hills further south, are small fountains; as at Mughâr and Kŭbâ'a.[3]

There are several important fountains along the western shore of the lake of Tiberias. The northernmost cluster of these is at et-Tâbighah (*Bethsaida*), now as of old a place of fishermen. There are here several large sources bursting forth from the foot of the hill just back of the village; their water, too, is brackish and slightly warm. It is used to turn one or two mills; and there are several others in ruins. Around the main fountain there is an ancient Roman reservoir, octagonal in form and of great solidity, but now in ruins. It was obviously built in order to raise the water to a certain height for an aqueduct. The head of water was sufficient to carry it around the point of the opposite hill, where there is a channel cut in the rock, and so into the northern part of the plain el-Ghuweir, or Gennesareth, for irrigation. The aqueduct was probably of wood; no trace of it now remains. Just west of the mills, near the shore, is a smaller brackish fountain, enclosed by a wall or small reservoir, and called Tannûr Eyûb, 'Job's oven.'[4]

[1] Biblical Researches, II. p. 435 [III. p. 341]. Thomson, Land and Book, I. p. 394.

[2] Biblical Researches, II. p. 435 [III. p. 341]. Thomson, Land and Book, I. p. 398.

[3] Later Biblical Researches, pp. 362, 363.

[4] Biblical Researches, II. p. 405 [III. p. 206]. Later Biblical Researches, p. 345.

A good half-mile south of et-Tâbighah, just at the southern base of the rocky promontory or bluff above mentioned, and at the northeastern corner of the fine plain el-Ghuweir, the *Gennesareth* of Josephus, is the copious spring 'Ain et-Tîn, close by the ruined Khân Minyeh, and near to the heaps of rubbish and ruins which mark the site of Capernaum. The fountain sends forth an abundance of sweet and pleasant water, neither brackish nor warm. It is so near the lake, that when the latter is full, it sets up nearly or quite to the fountain. The tract around the latter was covered, in May, 1852, with luxuriant clover.[1] This appears to be the fountain which, according to Josephus, was called *Kapharnaum ;* and by all analogy it must have been the fountain of the place which he elsewhere calls *Kepharnome* (Capernaum). The place and the fountain bore the same name, and belonged together ; and the latter was in the plain of Gennesareth, and was held to be a vein of the Nile.[2] This argument is conclusive to show that Capernaum was in the same plain, and was situated here at Khân Minyeh ; and not at Tell Hûm, as some suppose. There is no fountain whatever at Tell Hûm, nor within two miles of it.

In the western part of the same plain el-Ghuweir, at the base of the hills, a little west of north from Mejdel, is the large 'Ain el-Mudauwarah, or 'Round Fountain.' It is enclosed by a low wall of hewn stones, forming an oval reservoir more than fifty feet in diameter. The water in it is perhaps two feet deep, beautifully limpid and sweet, bubbling up and flowing out rapidly in a large stream to water the plain below.[3]

[1] Later Biblical Researches, p. 344.

[2] Joseph. Bel. Jud., 3. 10. 8. Vita, § 72. Later Biblical Researches, p. 350.

[3] Biblical Researches, II. p. 400 [III. p. 283].

Half way between Mejdel and Tiberias, a little Wady breaks down to the lake, and forms a small space of arable plain along the shore, which is tilled as a garden. In the lower part, just by the beach, is a cluster of five or six fountains, one of which is quite large and copious. The water is clear, slightly brackish, and also slightly warm. The place is called 'Ain el-Bârideh, 'Cold Spring,' in distinction from the hot springs south of Tiberias. Another name is Fûlîyeh. Each of the fountains was in ancient times enclosed by a wall of stone, or round reservoir, ten or twelve feet deep, and some fifteen feet in diameter, in which the water rose to the top and overflowed. In 1838, two of these enclosures were in tolerable preservation. For what purpose this head of water was thus obtained, whether for baths, or for irrigation, or for other uses, cannot well be determined.[1]

The Hot Springs near the lake, thirty-five minutes south of Tiberias, have already been described.[2]

Between the lake and Beisân there are, doubtless, fountains; but they have not been reported. At Beisân itself, the two brooks which tumble down the declivity at the village and further south have a slightly darkish hue and an odor of sulphur. This would seem to indicate a sulphur spring not far southwest of that place; while the abundance of water and water-courses further west, implies a marsh and perhaps ponds in the same quarter.[3] The plain of the Ghôr itself, opposite Beisân, is full of fountains and rivulets, making it in some parts almost a marsh.[4] In the same plain further south, we ourselves in 1852 fell in with no less than five fountains, 'Ain Mak-hûz, 'Ain ed-Deir, the source at

[1] Biblical Researches, II. p. 396 [III. p. 277].

[2] See above, p. 205.

[3] Later Biblical Researches, p. 327, 336.

[4] Later Biblical Researches, p. 325.

Tell Ridghah, 'Ain el-Beida, and the noble fountain at the foot of the low bluff of Sâkût, surrounded by fig trees.[1]

In Wady Mâlih, some distance west of where it enters the Ghôr, though not far above the level of the latter, there are rather copious salt springs, giving name to the Wady. The water is blood-warm (98° F.) and quite salt; and a fetid odor is perceptible.[2]

There is a fine spring in the Kerâwa, north of Kŭrn Sŭrtabeh.[3]

Just south of the Kŭrn is 'Ain Fŭsâil in the valley of the same name, some distance above the site of the ancient *Phasaëlis*. The fine spring is overshaded by wild fig trees and shrubs of various kinds; and in May, 1852, the water rippled down the valley as far as to the Tell and ruins of Fŭsâil, where it was lost in irrigating the gardens.[4] At 'Aujeh, too, further south, a fountain is reported.[5]

On the southern brink of Wady Nawâ'imeh, fifteen minutes below where it issues as a deep ravine from the western cliffs, is the cluster of fountains known as 'Ain Dûk. Here are two very copious sources, besides other smaller ones, all of fine limpid water. The waters naturally flow down Wady Nawâ'imeh. A large portion of them do so still; and there is an aqueduct further down, with pointed arches, which once served to distribute them over that part of the plain. But the waters of the highest and largest fountain are carried off towards the south-southeast by an artificial channel along the base of the mountain, for nearly an hour, and then, by a deep cut through the low ridge, were formerly carried

[1] Later Biblical Researches, pp. 310, 313-315.

[2] Later Biblical Researches, p. 308.

[3] Van de Velde, Memoir, p. 124.

[4] Later Biblical Researches, p. 294. Van de Velde, Memoir, p. 122.

[5] Biblical Researches, I. p. 568 [II. p. 303].

upon the 'Sugar mills,' so called, the only remaining token of the former extensive cultivation of sugar; and were thence distributed to different parts of the lower plain. One aqueduct with pointed arches, now dry, carried these waters across Wady Kelt, and far southwest of Jericho. The stream from the fountain is at first six or eight feet wide, and a foot and a half deep. Here doubtless was situated the ancient castle of Doch.[1]

Fifteen minutes east of the Sugar mills, and thirty-five minutes northwesterly from the present village of Jericho, is the large fountain 'Ain es-Sultân. This is the only one near Jericho; and there is every reason to regard these as the waters miraculously healed by Elisha.[2] They may have been earlier brackish and warm, like most of the fountains further north and south; now they are sweet and pleasant, not cold indeed, but also only slightly warm. The fountain bursts forth at the eastern foot of a high double mound, or group of mounds, situated a mile or more in front of the mountain Quarantana. It was once surrounded by a reservoir or semicircular enclosure of hewn stones; from which the water was carried off in various directions into the plain; but this is now mostly broken away. The largest stream at present runs towards the village; a part of it is still carried off across Wady Kelt, by an aqueduct with pointed arches. Of the two fountains, that of Dûk is the largest.[3]

A little more than half way from Jericho to the Jordan, at the ford el-Helu, in a low tract covered with shrubs and trees of the Rîshrâsh or willow (*Agnus castus*), is 'Ain Hajla, a beautiful spring of sweet and limpid water. It is

[1] Biblical Researches, I. p. 571 [II. p. 309]. Δώκ, 1 Macc. xvi. 14, 15.

[2] 2 Kings ii. 19–22.

[3] Biblical Researches, I. pp. 554, 555 [II. pp. 283–285].

enclosed by a circular wall of masonry, or small reservoir, five feet deep; and sends forth a tolerably copious stream, which waters the tract below. It is regarded as the finest water in all the Ghôr. This fountain doubtless marks the site of the ancient *Beth-Hoglah*, on the boundary line between Judah and Benjamin.[1]

A number of fountains exist along the western coast of the Dead Sea. On the shore, nearly an hour distant from the Jordan, and two hours N. E. by E. from 'Ain el-Feshkhah, is a brackish fountain in a cane-brake, called 'Ain Jehâir.[2]

'Ain el-Feshkhah is at the northern base of the bold promontory Râs el-Feshkhah. The fountain boils up near the shore, a very copious stream, or rather streams, of limpid water, but brackish, and having a slight taste of sulphuretted hydrogen. It is warm, like several of the fountains further north; its temperature being 80° F. The wet and marshy ground around the fountain is covered by a dense thicket of canes, extending for half an hour along the shore.[3]

On the shore, two thirds of the way from Râs el-Feshkhah to 'Ain Terâbeh, is the small fountain 'Ain Ghuweir. It is commonly reported as brackish; but is, in some seasons, sweet and potable.[4] 'Ain Terâbeh itself is about half way between Râs el-Feshkhah and 'Ain Jidy. It rises on the very shore of the lake, a strip of only twenty or thirty feet intervening. It is usually reported as brackish; but, at the time of Lynch's encampment there, it furnished a supply

[1] Biblical Researches, I. p. 544 [II. p. 268].

[2] Biblical Researches, I. p. 535 [II. p. 254]. Anderson, Geological Report, p. 198.

[3] Biblical Researches, I. p. 533 [II. p. 252]. Anderson, Geological Report, p. 166.

[4] Anderson, Geological Report, p. 166. Lynch, Official Report, p. 42. Biblical Researches, I. p. 531 [II. p. 249].

of perfectly sweet water. Here, also, is a thicket of luxurious growth.[1]

South of Râs Mersed, at the north end of the plain of 'Ain Jidy, comes down Wady Sudeir. In this valley, at some distance from the shore, there is a fountain of sweet water.[2]

The pearl of all these fountains along the Dead Sea, is that of 'Ain Jidy, nearly midway of the western coast. It bursts forth, a full stream, not upon the shore, but from a narrow plateau on the side of the cliff, four hundred feet above the lake. This cliff stands back a little from the lake, as compared with Râs Mersed and that south of Wady el-'Arcijeh; and the interval between its base and the lake is filled by a small and partly alluvial plain, in some parts nearly half a mile wide. The stream from the fountain rushes down the steep declivity below; and its course is hidden by a luxuriant thicket of trees and shrubs, belonging to a more southern clime. The brook takes its way across the rich plain directly to the lake; though when we saw it, in May, 1838, its waters were absorbed by the thirsty earth long before reaching the shore. So far as the water extended, the plain was covered with gardens, chiefly of cucumbers. The fountain itself is limpid and sparkling, with a copious supply of sweet water; but warm, the temperature being 81° F. Kept in vessels over night, we found it delightfully cool and refreshing. Like most of the fountains of the country, it is strongly impregnated with lime, and does not take soap well. In the fountain itself are great numbers of small black snails.[3]

[1] Anderson, Geological Report, p. 166. Biblical Researches, I. p. 528 [II. p. 245].

[2] Lynch, Narrative, p. 290. Biblical Researches, I. pp. 527, 533 [II. pp. 242, 252].

[3] Biblical Researches, I. pp. 504–506 [II. pp. 209–211].

In Wady el-Areijeh, next south of 'Ain Jidy, there is a fine fountain of sweet water, 'Ain el-'Areijeh; with large willow trees, from which the Arabs make bowls. It pours forth a very copious supply of water; which however soon runs to waste, and disappears entirely before reaching the lake.[1]

No other sources of sweet water are known on the western coast. South of the sea and of Jebel Usdum are the salt marshes and springs of 'Ain el-Beida. Still further south, along the foot of the Scorpion Cliffs, many brackish sources burst forth, converting the whole tract into a marsh. The largest of these is 'Ain el-'Arûs, nearly midway of the cliffs.[2]

*In the Ghôr East of Jordan.* The eastern side of the Ghôr has been less fully explored even than the western; and the fountains known to exist there are fewer.

Below 'Ain Kŭnyeh, a village on the hillside east of Bâniâs, there is a fountain; and more than three hours south of Bâniâs is 'Ain Râwy, northwest of el-Mughâr, which Dr. De Forest notes as the first source he saw on the way from Bâniâs.[3] There are probably other sources along the base of the hills; but no traveller has passed there to note them.

The little plain el-Batîhah, at the north end of the lake of Tiberias, is watered by no less than three perennial streams, which imply living fountains not far distant; but they have not been visited.[4]

[1] Biblical Researches, I. p. 500 [II. p. 204]. Anderson's Geological Report, p. 175.

[2] Biblical Researches, II. pp. 115–117 [II. pp. 493–495].

[3] Later Biblical Researches, p. 398. Journal of American Oriental Society, II. p. 241.

[4] Biblical Researches, II. p. 412 [III. p. 306].

The eastern shore of the lake of Tiberias remains in like manner unexplored; nor is any spring known on this side north of the river Yarmûk. The hot springs in the deep bed of that river may be regarded as belonging to the level of the Ghôr; they have already been described.[1]

No other fountain is marked until we reach Fahil, the site of ancient Pella, over against Beisân in the southeast. Here in the ravine south of the ruins is the large and noble fountain which led Pliny to speak of the place as "*Pellam aquis divitem.*"[2] The source is now called Jerm el-Mauz, and sends off a mill-stream down the valley, which at present is almost a marsh, overgrown with tamarisks and oleanders. The valley breaks down, as Wady Mauz, to the bottom of the Ghôr and the Jordan, half an hour south of the ford to Beisân. Near the fountain are two columns still standing, as of a small temple.[3]

Just south of Wady Yâbis, on the terrace of the Ghôr, there is a spring, giving rise to a marsh and small brook, with a fertile tract around.[4]

We pass on to Wady Sha'ib, descending from near es-Salt southwesterly to the Jordan, at a point E. by N. from Jericho. On entering the plain it passes the ruins of Nimrîn, the *Nimrah* and *Beth-Nimrah* of Scripture; and near by are several fountains, corresponding to the *Waters of Nimrim*.[5]

At the northeast corner of the Dead Sea the fountain 'Ain es-Suweimeh near the shore, is surrounded by cane-brakes. It would appear, that a small brook, Nahr es-Suweimeh, here

[1] See above, p. 179. [2] Plin. Hist. Nat., 5. 16 (18).

[3] Later Biblical Researches, pp. 321, 322.

[4] Later Biblical Researches, p. 316.

[5] Num. xxxii. 3, 36; Josh. xiii. 27; Isa. xv. 6; Jer. xlviii. 34. Seetzen, Reisen, II. p. 318. Biblical Researches, I. p. 551 [II. p. 279].

runs down to the shore, fed by two springs further back, 'Ayûn ed-Deib and 'Ayûn Mûsa.[1]

Between this spot and the Zerka Ma'în there are several small brooks of sweet water, and one large one; implying fountains not remote.[2] The hot springs in the bed of the Zerka Ma'în have already been described.[3] Half an hour south of the Zerka, Seetzen, who passed along the shore, reports another brook of hot water.[4] Between this and the Arnon the same traveller found three fountains of sweet water, two of them large, and several fine brooks. He was struck with the abundance of sweet water along the side of the Dead Sea.[5]

In Wady Hamâd, or Wady Beni Hamâdy, next north of Wady Kerak, a hot spring is reported; but has not yet been visited by travellers. There is another similar hot spring in a branch of Wady el-Ahsy, southeast from the south end of the Dead Sea.[6]

### IV. FOUNTAINS OF THE HILL-COUNTRY EAST OF JORDAN.

Travellers in these eastern regions have been comparatively few; and our information respecting the permanent sources of water is very imperfect.

The perennial sources which supply the Yarmûk and its branches, at Tell Dilly and el-Mazârîb, have already been described.[7]

In the rocky district of the Lejah there are no springs in

[1] Anderson, Geological Report, p. 194. Seetzen, Reisen, II. p. 324.

[2] Anderson, Geological Report, p. 194.

[3] See above, p. 178.

[4] Seetzen, Reisen, II. p. 368.

[5] Seetzen, Reisen, II. pp. 367, 368.

[6] Seetzen, Reisen, II. pp. 359, 360. Burckhardt, Syria, p. 401. See above, p. 183.

[7] See above, pp. 173, 174.

any part; and the inhabitants are wholly dependent on the rain water preserved in cisterns and Birkets or tanks. In the outer borders of the Lejah, however, called the Luhf, there are springs.[1]

In the west, on the great road from Damascus to the bridge over the Jordan, el-Jisr Benât Ya'kôb, at half an hour west of Tell Khanzir, is a cluster of fountains, known as 'Ayûn es-Semmâm. At Fîk, there are three springs below the village, which form a brook flowing down the valley towards the lake of Tiberias.[2]

In the great plain of Haurân, as well as on the slopes of the adjacent mountain, there are comparatively few springs. The supply of water is obtained mostly from wells, cisterns, and Birkets.[3] Yet some of the principal towns have copious fountains; as Kŭnawât (*Kenath*), Hebrân, 'Örmân (*Philippopolis*), and Busra (*Bozrah*, *Bostra*).[4] At the latter, there are no less than five sources outside of the city, and six within. There is likewise a fine spring at Tell Ash'areh.[5] Besides these, Burckhardt fell in with some ten or twelve other fountains in different parts of the plain. Some of the strongest places are wholly dependent on rain water; as Sŭlkhad, the ancient *Sulchah*.[6]

Passing southward into Jebel 'Ajlûn, the fountains reported are still few. Half an hour northwest of Hebrâs is 'Ain el-Terab, in a Wady.[7] Near 'Arjân are two sources, 'Ain el-Tannûr and 'Ain el-Beida; the brook flows to Wady Yâbis, and an hour below 'Arjân is another fountain. The stream drives three mills.[8] At Sûf are three copious springs,

[1] Burckhardt, Syria, pp. 112, 218.
[2] Burckhardt, p. 315. Ibid., p. 279.
[3] Seetzen, Reisen, I. p. 132.
[4] Burckhardt, Syria, pp. 83, 86, 89, 99, 221.
[5] Porter's Handbook, p. 531.
[6] Porter's Handbook, p. 100.
[7] Burckhardt, Syria, p. 270.
[8] Seetzen, Reisen, I. p. 383.

the permanent head of the stream which flows by Jerash (*Gerasa*) to the Zerka.[1] At the village 'Ain Jenneh, above 'Ajlûn, several springs issue from under the rock, and form the brook which descends through Wady-'Ajlûn to the Jordan; and half an hour north of 'Ajlûn is another fountain, 'Ain et-Teis.[2]

South of the Zerka, in ascending to es-Salt by the usual road from Jerash, there is a fine spring half way up, at 'Allân; and another further west, on the way from 'Abu 'Obeida to es-Salt.[3] At es-Salt there is a copious spring within the city; and another, 'Ain Jedûr, ten minutes distant towards the north in a valley.[4] In descending the narrow valley south of es-Salt, near the remains of a considerable town known as Khirbet es-Sûk, there is a fine spring called 'Ain Hâzôr. It turns several mills, and empties into Wady Shu-'eib, which runs by Nimrîn to the Jordan.[5]

Southeast of Fuheis, in the tract Ard el-Hemâr, are a number of springs, which render it fertile in pasturage.[6] Not far east, or northeast of these, are likewise springs at Sâfût and Um Jauzy.[7] All these lie on the usual routes from es-Salt by Fuheis to 'Ammân. The stream which flows by 'Ammân itself, and runs north to the Zerka, has its source in a small pond a few hundred paces south of the ruins.[8] According to Burckhardt, sources of water are only seldom met with in the high plain of the Belka; a circumstance which greatly enhanced the importance of the situation of 'Ammân.[9]

Not far west of Hesbân (*Heshbon*) is a fountain, the head

[1] Burckhardt, Syria, p. 249. Seetzen, Reisen, I. p. 387.
[2] Burckhardt, Syria, pp. 266, 267. Seetzen, Reisen, I. p. 386.
[3] Lord Lindsay's Letters (London, 1858), p. 287. Burckhardt, Syria, p. 348.
[4] Burckhardt, Syria, p. 350.
[5] Burckhardt, Syria, p. 355.
[6] Burckhardt, Syria, p. 356.
[7] Burckhardt, Syria, pp. 361, 362.
[8] Burckhardt, Syria, p. 357.
[9] Burckhardt, Syria, p. 361.

of Nahr Hesbân, which runs to the Jordan just above its entrance into the Dead Sea. It drives several mills.[1] No other springs are reported north of Rabba; though the streams which rise in the east and flow in deep chasms across the plain, as the Zerka Ma'în, the Wâleh, and the Môjib, indicate fountains in that quarter. Less than an hour southeast of Rabba, are two copious fountains, 'Ain Jubeibeh and 'Ain Yârûd.[2] At Kerak, in the valley north and west of the town, are several large springs. One of them, 'Ain Sârah, issues from the rock in a very romantic spot, and serves to turn three mills. Another, 'Ain Feranjy, 'Frank spring,' is southwest of the city nearly a mile distant.[3]

Near Khanzireh are several springs; the waters unite in a rivulet, which irrigates the fields and extensive gardens of the village.[4]

The springs near Kul'at el-Ahsy, or el-Hassa, at the head of Wady el-Ahsy, have already been referred to.[5]

## WARM AND MINERAL FOUNTAINS.

The springs sending forth warm and mineral waters, have been enumerated above with the rest. So far as is known, they are found only in the depressed region of the Ghôr. They may be divided into three classes:

*Hot Sulphur Springs* are found in five places; namely, near Tiberias, on the western shore of the lake; temperature 144° F.[6] In the deep chasm of the Yarmûk, north of Um Keis, or Gadara; highest temperature 109° F.[7] In the ravine

[1] Seetzen, Reisen, I. p. 407, II. p. 323.

[2] Burckhardt, Syria, p. 377.

[3] Burckhardt, Syria, p. 379. Irby and Mangles, p. 137.

[4] Burckhardt, Syria, p. 397.

[5] See above, p. 183. Burckhardt, Syria, p. 658.

[6] See above, p. 205. [7] See above, p.175.

of the Zerka Ma'în (*Callirrhoë*) east of the Dead Sea.[1] In Wady Hamâd, and in a branch of Wady el-Ahsy.[2] With the exception of those near Tiberias, these are all on the east of the Ghôr.

*Warm Saline Springs* occur at a single spot, in Wady Mâlih, south of Beisân. The temperature of the water is blood warm, or 98° F.[3]

*Warm Springs* in general, of which there are at least five reported, all on the west of the Ghôr. 'Ain el-Mellahah and 'Ain et-Tâbighah are slightly warm and brackish.[4] 'Ain es-Sultân, near Jericho, is slightly warm, but not brackish.[5] 'Ain el-Feshkah, on the western shore of the Dead Sea, is quite brackish, with a temperature of 81° F., while 'Ain Jidy, further south, has a temperature of 80° F., without any brackish taste.[6]

[1] See above, p. 179.
[2] See above, p. 260.
[3] See above, p. 254.
[4] See above, p. 251.
[5] See above, p. 255.
[6] See above, pp. 256, 257.

## SECTION IV.

### WELLS. CISTERNS. RESERVOIRS. AQUEDUCTS.

All these, as being the work of man, do not in a strict sense belong to Physical Geography. Still, as they relate to the supply and preservation of the natural element of water, they may properly be considered here.

#### I. WELLS.

There are many wells in Palestine, particularly in those parts remote from fountains and permanent streams. The patriarchs, in their wanderings, caused wells to be dug for the supply of their flocks and herds; especially in the south of Judea. Of these several remain unto the present day.

Abraham's servants thus dug several wells in the south; where, in those days, the Philistines likewise pastured their flocks. After his death, the latter stopped the wells which his servants had dug, and filled them with earth.[1] Only one of Abraham's wells is spoken of by name, that of Beer-sheba, 'well of the oath.' Here, too, Isaac digged a well, after having restored the others; probably a second well, for the better supply of his numerous flocks.[2] These wells are still known among the Arabs at Bîr es-Seba'.

Upon the northern side of Wady es-Seba', close upon the

[1] Gen. xxvi. 15, 18.

[2] Gen. xxvi. 25, 32, 33.

bank, are the two deep and ancient wells which give occasion for this name. They are circular, and are stoned up very neatly with solid masonry, apparently of great antiquity. The larger one is twelve and a half feet in diameter, and forty-four and a half feet deep to the surface of the water (in April, 1838); sixteen feet of which, at the bottom, is excavated in the solid rock. The other well is fifty-five rods W. S. W., and is five feet in diameter, and forty-two feet deep. The water in both is pure and sweet, and in great abundance. Both wells are surrounded with drinking-troughs of stone for camels and flocks; such as were doubtless used of old for the latter, which then fed on the neighboring hills. The curbstones are deeply worn by the friction of the ropes in drawing up water by hand.[1]

Of Isaac it is related, that he removed from the city Gerar, and pitched his tent in the valley of Gerar; where he "digged again the wells of water, which they had digged in the days of Abraham his father," and which the Philistines had stopped after the death of Abraham.[2] His servants likewise digged two other wells, called Esek and Sitnah, apparently in or near the same valley; from which the Philistines drove them away.[3] Isaac then "removed from thence, and digged another well; and for that they strove not; and he called the name of it Rehoboth," 'wide places, room.'[4] It is an obvious suggestion, that this name may be preserved in the modern er-Ruhaibeh, the name of a Wady on which are the ruins of an extensive ancient city, about eight hours

[1] Biblical Researches, I. p. 204 [I. p. 300]. Stewart, Tent and Khân, p. 214. Dr. Durbin mentions a third well now filled up, Travels, I. p. 200. Van de Velde speaks of *five* wells of smaller diameter in the dry bed of the Wady; Narrative, II. p. 136.

[2] Gen. xxvi. 6, 17, 18.

[3] Gen. xxvi. 19, 21.

[4] Gen. xxvi. 22.

south of Beersheba. There is here an ancient well, now filled up, twelve feet in diameter, and regularly built up with hewn stone; one course of the stones being still visible above ground.[1] It seems, indeed, not improbable that Isaac, when driven away from his wells in the valley of Gerar, followed up that valley, or its branches, until he came to the fertile Wady er-Ruhaibeh.[2] There, his servants, having dug this well in quiet, a city of the same name afterwards sprang up around it. I am disposed to accept this identity of name and place; especially as it is said that Isaac "went up from thence to Beersheba," implying a journey of some distance.[3] But down to the year 1838, there is no historical notice, so far as is known, either of the well or city, since the days of Isaac.

It was after this that Isaac caused the second well to be dug at Beersheba, as above related.[4]

Jacob, on his return from Syria, purchased a piece of ground on the east of Shechem, now Nâbulus; where he pitched his tent and erected an altar to the Lord.[5] He afterwards removed to Bethel, and again to Mamre and Hebron, where he seems to have dwelt until his departure for Egypt; having possession apparently of the wells of his fathers in the south.[6] In the Old Testament it is nowhere said that Jacob dug any wells; but from the New Testament we learn, that he caused one to be dug on the piece of ground which he bought near Shechem.[7] At this well our Lord held his remarkable conversation with the Samaritan woman; and

[1] Biblical Researches, I. p. 196 [I. p. 290]. Stewart, Tent and Khân, p. 202.
[2] See above, p. 123. [3] Gen. xxvi. 23.
[4] Gen. xxvi. 25, 31, 32; comp. vs. 18.
[5] Gen. xxxiii. 19; Josh. xxiv. 32.
[6] Gen. xxxv. 1, 3, 6, 15, 16, 27, xxxvii. 14, xlvi. 1, 5.
[7] John iv. 5–12.

there is no doubt but that the same well remains to this day. We know from Jerome, that as early as the fourth century a church was erected near the well; the ruins and three granite columns of which are still seen around it.[1]

The opening of the well, as seen from without, is very small; and is usually covered with a stone. But this is only an orifice in the roof of a vault or dome of stone, built up over the proper mouth of the well. In this vault was formerly an altar; on which Greek and Latin priests were accustomed to celebrate mass once a year. The well itself is nine feet in diameter, and seventy-five feet deep, entirely hewn out of the solid rock. It is a work of great labor, and bears marks of the highest antiquity. The well is often dry; it was so in June, 1838, and nearly so in April, 1843; while in April, 1839, it had ten or twelve feet of water. These variations are the more singular, since the neighboring fountains of Defneh and Belâtah, the latter quite near, are understood to be permanent, sending forth their large streams all the year round.[2]

It may here be asked, how the Samaritan woman can be supposed to have come from the city, now half an hour distant, in order to draw water, when too she must have passed directly by large fountains on her way? To this it may be replied, that probably the ancient city of Shechem once extended much further down the valley towards the well; and also, that there may naturally have been in the minds of the inhabitants, an idea of the greater purity and value of the water of Jacob's well; so that they occasionally resorted to

[1] Hieron. (ed. Martianay), Ep. 86; Epit. Paulae, p. 676. Biblical Researches, II. p. 284 [III. p. 110].

[2] Biblical Researches, II. pp. 283, 284 [III. pp. 109, 110]. Wilson, Lands of the Bible, II. pp. 55–57. See above, p. 248.

it even for a small supply. The woman had only a water-jar.[1]

More difficult is it to understand, why a well, excavated with so much labor, should ever have been dug on this spot at all; so near to large fountains and streams. For this I am unable to account, unless by supposing, that in this land of earthquakes these fountains may have burst forth at some later period, after the well was dug.

Besides the wells of the patriarchs, there are many others bearing the marks of high antiquity. Such is the well of Job, the ancient *En-Rogel*, in the valley under Jerusalem; to be described among the waters of the Holy City. At Milh (*Moladah*), quite in the southeast of Judah, are two old wells, measuring about forty feet in depth, and walled up round with good mason-work; one is seven and a half and the other five feet in diameter. The water is not in high repute among the Arabs.[2]

Near Idhna (*Jedna*) southeast of Beit Jibrîn, is a large public well; the curbstones of which are much worn by the friction of ropes.[3] Near Beit Jibrîn itself (*Eleutheropolis*) are three large public wells, apparently ancient, and surrounded with drinking troughs.[4] At Sŭmmeil, on the way to Gaza, is a large public well, one hundred and ten feet deep to the water, and eleven feet in diameter; the walls are circular, and composed of hewn stones of good masonry.[5] At Hûj and Sukkarîyeh, villages lying between Gaza and Beit Jibrîn, are wells probably ancient; that of the former is nearly two hundred feet deep.[6] At Dâniyâl, east of Lydda,

[1] John iv. 28, ὑδρία. [2] Biblical Researches, II. p. 200 [II. p. 619].
[3] Biblical Researches, II. p. 57 [II. p. 404].
[4] Biblical Researches, II. p. 26 [II. p. 257].
[5] Biblical Researches, II. p. 33 [II. p. 367].
[6] Biblical Researches, II. pp. 45, 50 [II. pp. 386, 393].

is likewise one, one hundred and sixty feet deep.[1] Further, there are ancient wells at Kefr Sâba (*Antipatris*), near Kefr Kûd (*Caparcotia*), and at Kefr Menda in Galilee.[2]

Occasionally wells appear to have been dug at a distance from towns or villages, by the wayside, for the convenience of travellers and their animals, or of flocks and herds pastured in the region. Thus in Wady es-Sŭmt, southeast of Beit Nettîf, is an ancient well of this kind, twenty-five or thirty feet deep; and in another valley further west, is a second similar well, at which there were many flocks.[3]

Between 'Ain Shems (*Beth-Shemesh*) and Âkir (*Ekron*) are two such wells; the one nearest Ekron being quite large, and usually surrounded by flocks.[4] On the way from Lydda to Beit 'Ûr (*Beth-horon*) there is a well near a former Wely, called Um Rûsh; and another further east by the wayside.[5] Not far southeast of 'Akka also, on one of the great roads leading into Galilee, are two similar wells, at some distance apart.[6]

Of King Uzziah it is related, that he "built towers in the desert and digged many wells [or cisterns]; for he had much cattle."[7] Whether these were wells or cisterns (the Hebrew word may signify either), they were obviously intended for the flocks and herds.

These public wells are ordinarily surrounded with drinking troughs of stone, rarely of wood, for the use of animals. Sometimes ancient sarcophagi are employed for this purpose. Thus at Kefr Menda in Galilee no less than three such sar-

[1] Biblical Researches, II. p. 248 [III. p. 55].
[2] Later Biblical Researches, pp. 139, 121, 109.
[3] Biblical Researches, II. pp. 21, 22 [II. pp. 350, 351].
[4] Biblical Researches, II. p. 226 [III. pp. 20, 21].
[5] Biblical Researches, II. pp. 249, 250 [III. pp. 57, 58].
[6] Later Biblical Researches, p. 89.
[7] 2 Chron. xxvi. 10.

cophagi lie around the great well of the village as drinking-troughs. One of them is sculptured on the side with not inelegant festoons.[1]

Around these wells there are frequently, even at this day, scenes of pastoral life, not unlike those of the patriarchal times. Thus at Beit Jibrîn, in 1838, flocks and herds were gathered around the wells; while men and women were drawing water, and filling for them the many drinking-troughs.[2] At the well in the valley west of Wady es-Sŭmt, many cattle, flocks of sheep and of kids, and also camels, were all waiting around; and men and women were busily employed in supplying them with water. These hospitable people at once offered and drew water for us and our thirsty animals, without expectation of reward.[3] Similar scenes were repeated at various other wells.

The mode of drawing water is various. Where the well is not too deep, the rope of the bucket is usually let down and drawn up by hand. At Sŭmmeil, where the well is over a hundred feet deep, the rope was passed over a pulley above the well; and then several women hauled it up by running off with it a long distance into the fields.[4] At the still deeper wells of Hûj and Dâniyâl, the rope was fitted in like manner over a pulley, and was drawn up by a yoke of oxen driven off in a straight line into the fields.[5] At Sukkarîyeh, a village which had just been rebuilt by Sheikh Sa'îd, governor of Gaza, an Egyptian *Sâkieh* had been introduced; that is, an endless rope, with jars attached to it, passing over a

[1] Later Biblical Researches, p. 109.

[2] Biblical Researches, II. p. 26 [II. p. 357].

[3] Biblical Researches, II. p. 22 [II. p. 351].

[4] Biblical Researches, II. p. 33 [II. p. 367].

[5] Biblical Researches, II. pp. 45, 248 [II. p. 367, III. p. 55].

wheel above the well; this was turned by a camel travelling in a circle.[1]

Still more common seems to be the drawing of water by means of a reel placed horizontally on a platform over the mouth of the well, with the rope fastened to it. A man sitting on a bar or bench level with the axis, winds up the rope by drawing the top of the reel towards him with his hands, and at the same time pushing the bottom of it from him with his feet. We saw this method first at the well west of Wady es-Sŭmt, where the reel was small and was turned by one man; and again at the well southeast of Ekron, where the reel was larger and two men were at work; the same machine was also in use at the two wells southeast of 'Akka.[2]

This method of raising water was formerly known in Egypt, though now superseded there; and seems to afford the best explanation of what is meant in Scripture by the phrase "watering with the foot."[3]

## II. CISTERNS.

As rain falls in Palestine ordinarily only in the period from November till March; and during summer the winter-brooks dry up, and the fountains become low; it is important for the inhabitants to preserve the waters of the rainy months into the dry season, and until the autumnal rains again commence. This is done in cisterns beneath the surface of the ground; and in reservoirs above ground.

These cisterns are quite frequent; and have, for the most part, apparently come down from ancient times. They are

[1] Biblical Researches, II. p. 50 [II. p. 393].

[2] Biblical Researches, II. pp. 22, 226 [II. p. 351, III. p. 21]. Later Biblical Researches, p. 89.

[3] Deut. xi. 10. See especially Biblical Researches, I., Note 2, end of the volume.

usually, if not always, excavated in the underlying rock; which would seem not difficult to be wrought, and sufficiently compact to hold the water. Not unfrequently the walls are plastered over with cement. Jerusalem itself is supplied with water mainly from its cisterns; and the same is true of many towns and villages in the hill-country. Ancient cisterns are still found likewise in the fields and along the high roads; in which the water of the rainy season was collected, for the sustenance of the flocks and herds, and for the comfort of the traveller and his beasts.

The cistern is usually nothing more than an excavated chamber, with a round opening at the top. In the country this opening is generally kept covered with one or more large stones. In the town and in houses, the water is conducted into the cistern from the roofs and paved courts; and the opening is often built up around with stonework, and furnished with a curb and a wheel for the bucket; so that externally the whole has the appearance of a well. Sometimes the mouth of the cistern is at one side or corner, with steps left in the rock to descend into it and bring up water.[1]

It is needless to name the places where cisterns are still to be found. The whole hill-country of Judea and Galilee is full of them. In the low plains, where there is little underlying rock, they are not frequent, and occur only in parts where rock exists. A few notices will suffice.

At Ruhaibeh, probably Isaac's well *Rehoboth*, now in the desert, there are a number of cisterns among the ruins of the houses.[2] In the circuit of the fortress *Masada*, now Sebbeh, are still seen several cisterns; one of them very large, being nearly fifty feet deep, a hundred long, and forty

[1] Later Biblical Researches, pp. 85, 281.

[2] Biblical Researches, I. p. 197 [I. p. 290].

broad, with steps to descend into it, and having its walls still covered with a white cement.[1] At Beni Na'îm, east of Hebron, are likewise ancient cisterns, and there are several along the road leading to it from the north; one of these still well covered on the inside with cement, though now broken.[2] On the summit of Tell Zîf (*Ziph*) a number of cisterns are still seen; and on the way from Carmel to 'Ain Jidy through the desert are two deep ones, still used by the Bedawîn; and a third, further down, was hewn out of the rock, a column being left to support the roof; but the roof is now broken away.[3]

Around Hebron there are many cisterns; some of them very large. The town itself appears to have been mainly supplied from its fountains; and private cisterns are not found in the houses, as at Jerusalem.[4] But outside of the city, round about, a large provision of cisterns was made for the flocks and herds pastured on the neighboring hills. Thus there are two large ones just north of the city; also two others in Wady en-Nusârah, still further north, one of which is kept covered with a heavy stone; besides others casually mentioned.[5] On the slope and summit of the hill south of er-Râmeh, or Abram's House, are several large and remarkable ancient cisterns. Southeast of these is the vast and singular excavation known as Bîr Ijda; which, according to Rosen, is a cistern of enormous extent hewn out in the soft limestone rock of the region. It has three openings in the top for drawing water; from the main opening to a second,

[1] Wolcott, in Bibliotheca Sacra, 1843, p. 64.

[2] Biblical Researches, I. pp. 488–490 [II. pp. 185–188].

[3] Biblical Researches, I. pp. 492, 499 [II. pp. 191, 202].

[4] Rosen, in Zeitschr. der Deutschen morg. Gesellschaft, 1858, XII. p. 490.

[5] Rosen, in Zeitschr. der Deutschen morg. Gesellschaft, 1858, XII. pp. 483, 484, 487.

northwest, is forty-six paces; and from the same point to the third, south, twenty-eight paces. The roof is supported by pillars left in the rock itself. The distance between the surface of the water and the roof, as seen by Wolcott in March and by Rosen late in summer, was about six feet. On one side a sloping passage has been cut down to the water, by which animals can descend and drink. This passage was furnished with a door, and an ornamental portal. One of the cisterns in Wady en-Nusârah, called Bir Beshât, has in like manner a passage for animals to go down.[1]

On the ancient way between Jericho and Bethel are still to be seen several old and broken cisterns; indicating that this was once an important and frequented road.[2]

At the ruined Khân opposite er-Râm, is a public cistern; and another ten minutes north of Deir Jerûr, by the wayside, where women were washing, and where at first we were refused water for our animals.[3] Râmîn, a village northwest of Samaria, is wholly supplied by cisterns; which are numerous in that and other villages of the region; as well as along the roads. Thus, beyond 'Anebta, further west, are two cisterns by the wayside, at which women were drawing water and bearing it off in jars.[4]

At Hableh on the border of the western plain, near Antipatris, our tent, in 1852, was pitched in a low tract, in the midst of cisterns dug out in sunken rock, mostly with a round opening at the top. Some were entirely open, with steps to descend into them. A large one was twelve feet

[1] Rosen, in Zeitschr. der Deutschen morg. Gesellschaft, 1858, XII. pp. 496, 497, 499. Wolcott, in Bibliotheca Sacra, 1843, pp. 55, 56.

[2] Biblical Researches I. p. 573. [II. p. 311].

[3] Later Biblical Researches, pp. 287, 291.

[4] Later Biblical Researches, pp. 127, 129.

long by nine feet broad and eight feet deep; two rude and very flat arches were thrown over it; and on these rested the covering of flat stones, some of which still remained. All these excavations were evidently ancient; and were thus numerous just here in the low ground, because of the greater abundance of water in the rainy season. Only one of them was now in use.[1]

On the summit of Tabor are several ancient cisterns; in one of which we found good water.[2]

The water of cisterns is not always the most pure and pleasant. Where it is collected from roofs and courts, which are kept clean, and the cisterns themselves are duly cleansed, the water, as mostly in Jerusalem, is pure, sweet, and cool. But in the villages and fields, where it is gathered from dirty roofs, and streets, and the surface of the ground, it contains many impurities, and soon acquires a disagreeable smell and nauseous taste; exhibiting also the small wriggling worms usually found in stagnant rain water. The contrast between the dead water of cisterns and the living water of gushing fountains, as well as the liability of cisterns to get out of repair and lose their water, furnished to the prophet Jeremiah one of his finest figures: "My people have committed two evils; they have forsaken me, the fountain of living waters, and hewn them out cisterns, broken cisterns, that can hold no water."[3]

Cisterns were sometimes used as dungeons to confine prisoners. The pit into which Joseph was cast by his brethren, was a cistern in the fields around Dothan; it is said expressly, "the pit was empty; there was no water in it."[4]

[1] Later Biblical Researches, p. 137.

[2] Biblical Researches, II. p. 333 [III. p. 214].

[3] Jer. ii. 13.

[4] Gen. xxxvii. 22, 24.

The dungeon into which Jeremiah was let down with cords, was a deep cistern in the court of the prison; in it "there was no water, but mire."[1]

*Cisterns for Grain.* Another kind of cisterns is found in the southern portion of Palestine, which serve for the storing and preservation of grain after it is threshed. The cisterns proper are designed to receive and hold water; these are intended to keep out water. A dry spot is selected near a village, where all water can readily be turned away; and several of these pits are usually constructed near together. The form is ordinarily that of a dome or bell, with a round opening at top; which, after the grain is stored, is closed and made tight with cement. By covering the mouth over with earth, such a storehouse may be entirely hidden from robbers and enemies. In this dry soil grain may thus be preserved sound for years, and kept also from mice and other vermin.

These granaries are to be found in many parts of Judea; in Galilee small magazines of stone are erected. In the village of Kubâb, southeast of Ramleh, we had to pick our way with some difficulty among the numerous openings leading to these subterranean storehouses. We remember several, also, near the village in the Mount of Olives.[2]

### III. RESERVOIRS OR TANKS.

The artificial reservoirs or tanks for collecting and preserving water above ground, are in the English Version called *Pools*. The Hebrew name is *Berekah;* which reappears in the Arabic form *Birkeh*. They are frequent in Pal-

[1] Jer. xxxviii. 6; comp. xxxvii. 21.

[2] Later Biblical Researches, p. 143. Comp. Thomson, Land and Book, II, p. 262.

estine; especially in the parts which are remote from fountains and wells; and have been constructed mainly for the supply of flocks and herds. They are usually near a village and in a valley or depression, where the water can readily be conducted into them. Sometimes they are formed merely by a wall or dam thrown across the valley; at other times there is also a wall at the upper end. Sometimes the rocky walls of the valley serve for the sides; or, again, both sides and ends are built up with solid masonry, forming a massive quadrangle. Many of the pools still to be met with are ancient. Indeed, I do not remember to have seen in Palestine any reservoir of recent construction; except one near 'Arrâbeh in Galilee; and that was already broken.[1]

What has been said above in respect to the impurity of cistern water, holds true in a higher degree of the water of open reservoirs. It brings with it all the impurities incident to the cistern; and is further exposed to the sun and dust, and to the presence of reptiles and vermin. In not a few, the cattle and dogs enter the water at will; and soon impart to it the taste and odor of the stable. This water is used by the inhabitants for cooking and washing; and some have no other supply.[2]

Some of the largest of the ancient reservoirs now remaining are at Jerusalem, and will be described in connection with the other waters of the Holy City. Most of the scriptural allusions to 'pools' refer to Jerusalem; indeed, only two others are definitely mentioned.

One of these is at Hebron. In the south part of the town, in the bed of the valley, is the largest of the two pools now seen at Hebron; a square reservoir, measuring one hundred

[1] Later Biblical Researches, p. 84.

[2] Comp. Thomson, Land and Book, I. p. 316.

and thirty-three feet on each side, built with hewn stones of good workmanship. The whole depth is nearly twenty-nine feet; of which the water, in May, 1826, occupied not quite fourteen feet. In the beginning of September, Rosen found still several feet of water in the pool; but at the end of the month it was empty, and the mud at bottom dried by the sun. Flights of steps lead down into it at each corner. Just at the north end of the main part of the town is the smaller pool, also in the bed of the valley, eighty-five feet long by fifty-five broad; its depth is nearly nineteen feet, of which the water occupied not quite seven feet. These reservoirs seemed to furnish the main supply of the town at the time (1838), notwithstanding the various fountains; and were constantly frequented by persons carrying away the water in skins. That of the smaller pool was neither clear nor clean. The pools were said to be filled only by the rains; though there is no brook in the valley, even in the rainy season. Rosen supposes that the pools themselves are ancient; but that the present masonry is modern, the work of the Muhammedans. The larger and more public of these reservoirs is, probably, "the pool in Hebron," over which David hanged up the assassins of Ishbosheth.[1]

The other scriptural reference is to "the pool of Gibeon."[2] The fine fountain of Gibeon is situated a little east of the village, on the north side of the rocky ridge, just below the top; it is in a cavern excavated under the high rock, so as to form a subterranean reservoir of considerable size. Some eight or ten rods below it, among the olive trees, are the remains of a larger open reservoir, similar to that

[1] 2 Sam. iv. 12. Biblical Researches, II. p. 74 [II. p. 432]. Rosen, in Zeitschr. der Deutschen morg. Gesellschaft, 1858, XII. p. 490.

[2] 2 Sam. ii. 13.

at Hebron; intended anciently, no doubt, to receive the waters overflowing from the cavern during the rainy season. This is probably the same spoken of by the prophet as "the great waters in Gibeon;" so called as compared with the waters of the cavern.[1] Here took place the challenge of Abner to Joab, and the battle between their followers, terminated by the defeat and flight of the former, and the death of Asahel.[2]

The Psalmist also once refers to the fact, that "the rain filleth the pools," as an emblem of pastoral and agricultural prosperity.[3]

Among the largest ancient reservoirs in Palestine, was that at Bethel, in the shallow western valley. It measures three hundred and fourteen feet in length, by two hundred and seventeen feet in breadth; the walls were built with massive masonry. The southern wall is still entire; those upon the sides are partly gone; the northern one has almost disappeared. This large pool was fed by two living springs within it.[4]

At the probable site of ancient *Ai*, in the western valley, where the rocks at the side are precipitous for a few feet in height, there are no less than *three* ancient reservoirs, mostly dug in the rock, and having the following dimensions:[5]

| | Length. | Breadth. | Depth. |
|---|---|---|---|
| Upper or Northern, . . | 110 feet. | 32 feet. | 6 feet. |
| Middle, . . . . | 37 | 26 | 12 |
| Lower, . . . . | 88 | 22 | 15 |

Other similar reservoirs, or pools, of various sizes, have

[1] Jer. xli. 12. Biblical Researches, I. p. 455 [II. p. 136]. Barclay, City of the Great King, p. 549.

[2] 2 Sam. ii. 12-24.

[3] Ps. lxxxiv. 6.

[4] Biblical Researches, I. p. 449 [II. p. 127].

[5] Biblical Researches, I. p. 574 [II. p. 312].

come down from antiquity; for example, one at Ramah of Benjamin;[1] two or three at Neby Samwîl (*Mizpeh*);[2] two at el-Bireh (*Beeroth*) fed from the fountain;[3] a deep one cut in the rock at Rŭmmôn (*Rimmon*);[4] a large one with a high wall at 'Akrabeh in the toparchy of *Acrabatene*;[5] and in various other places.

*Solomon's Pools.* Of all the ancient reservoirs in the Holy Land, by far the largest and most important are the three immense tanks which the tradition of monks and travellers knows only as "Solomon's Pools;" but called by the Arabs simply el-Burak, "the Pools." They are situated an hour southwest of Bethlehem on the way to Hebron. They are in the open head or basin of a valley declining towards the east, just above the point where it becomes narrow and is joined by other nearly parallel valleys in the south. The pools are some distance apart; each on a different level, so that the bottom of the one is higher than the surface of the next below; and they do not lie in a straight line. As seen from without, they appear as massive structures built up above the ground; the upper or western end of each being slightly higher than the eastern. The following measurements were taken in 1838:[6]

I. Eastern or Lower Pool.

Length, 582 feet. Breadth, east end 207 feet, west end 148 feet.
Depth at east end, 50 feet; of which 6 feet water.

II. Middle Pool.

Distance above Lower Pool, 248 feet.
Length, 423 feet. Breadth, east end 250 feet, west end 160 feet.
Depth at east end, 39 feet; of which 14 feet water.

[1] Later Biblical Researches, p. 287.
[2] Biblical Researches, I. p. 457 [II. p. 140].
[3] Biblical Researches, I. p. 451 [II. p. 136].
[4] Later Biblical Researches, p. 290.
[5] Later Biblical Researches, p. 296.
[6] Biblical Researches, I. p. 474 [II. pp. 164, 165].

III. Upper Pool.

Distance above Middle Pool, 160 feet.

Length, 380 feet. Breadth, east end 236 feet, west end 229 feet.

Depth at east end, 25 feet; of which 15 feet water.

The walls of the reservoirs are built of large hewn stones. The bottom is formed by the naked shelving rock, which constitutes the bed of the valley, leaving only a narrow channel along the middle, and having several offsets or terraces along each side. The inside walls and bottoms of all the reservoirs, so far as visible, are covered with cement; and the lower one, in 1838, had been recently repaired. Flights of steps lead down in various places into all the pools. Near the northwest corner of the upper pool there is now an old square Saracenic castle, also called el-Burak.

The main source of supply for all these reservoirs, is a sunken fountain, situated in the open and gradually ascending fields, about forty rods northwest of the castle. Here one sees only the narrow mouth of a well, which is usually kept stopped with a large stone, too heavy to be removed without the efforts of several men. The fountain is thus described by Maundrell:[1] "Through this hole you descend directly down, but not without some difficulty, for about four yards; and then arrive at a vaulted room fifteen paces long and eight broad. Joining to this, is another room of the same fashion, but somewhat less. Both these rooms are covered with handsome stone arches, very ancient, and perhaps the work of Solomon himself. You find here four places at which the water rises. From these separate sources it is conveyed by little rivulets into a kind of basin; and from thence is carried by a large subterranean passage down to the pools."

[1] Journey from Aleppo to Jerusalem, April 1, 1697.

This subterranean passage terminates at the northwest corner of the upper pool, in a sort of artificial fountain just above the latter, so arranged that the water here divides. A part passes off through a small channel or aqueduct, which runs along the north side of the pools; while another part is turned down into a vaulted but not large subterranean chamber, whence it flows off through a square passage to the adjacent upper pool. The aqueduct above mentioned continues along the north side of all the reservoirs, giving off a portion of its waters to the middle pool, and another portion to the lower one. It then passes down a steep declivity, to join a similar channel leading from the lower end of the lower pool, as also another coming from a parallel valley in the north. There is also a similar channel coming around the point of the hill from higher up in the southern valley, intended to bring the waters of the rainy season from that quarter into the lower pool, about a hundred feet west of its lower end.

At the eastern end of the lower pool a large external abutment is built up, in which is a passage and a vaulted room extending under the massive wall of the reservoir, quite up near to the water. This room appears to be not unlike those at the sunken fountain; but the purpose for which it was constructed it is difficult to explain.

These pools furnish in summer a place for bathing and swimming; and are sometimes so used by the Franks of Jerusalem.[1]

These great reservoirs are nowhere mentioned or directly alluded to in Scripture; nor is any ancient historical notice of them known to exist. The object for which they were

[1] Biblical Researches, I. pp. 474–476 [II. pp. 165–168]. Barclay, City of the Great King, pp. 554–557.

constructed may have been twofold. According to late Jewish writers, cited in the Talmud, the temple in Jerusalem was supplied with water by an aqueduct from the fountain at Etam, which was on the way to Hebron. To this day an aqueduct leads from one of these ancient reservoirs and from the fountain that feeds them, to the site of the ancient temple. Here was one object. And if the gardens of Solomon at Etam were in the fertile valley below the pools, as is probable, then another use of the latter may have been to supply water for irrigating these gardens during the dry summer season. There is, however, no visible arrangement for drawing off water, either into the aqueduct or to the valley below, except from the lower pool.[1]

If such were the objects for which the pools were constructed, their antiquity may well go back to the days of Solomon.

### IV. AQUEDUCTS.

There are several aqueducts of the middle ages near Jericho, supported on pointed arches, and intended to distribute over the plain, around and north of that place, the waters of the fountain of Dûk and 'Ain es-Sultân.[2] There is likewise a modern aqueduct in the plain of 'Akka, bringing water to the city.[3] The Haram at Hebron is also supplied with water from two or three fountains, by means of modern conduits.

Scripture speaks of three ancient conduits or aqueducts at Jerusalem; namely, 1. Siloam, "which is by interpretation, *Sent*," referring to the subterranean passage by which the

[1] Biblical Researches, I. p. 348 [I. p. 515].

[2] Biblical Researches, I. pp. 563, 568 [II. pp. 298, 304].

[3] Later Biblical Researches, p. 91.

pool of Siloam is fed. 2. "The conduit of the upper pool," bringing down its waters, as now, to the city. 3. The aqueduct mentioned by Josephus, supplying water to the tower of Hippicus and to Herod's palace on Zion.[1] Possibly the latter two are identical. They will all be treated of among the waters of Jerusalem.

The aqueduct leading from Solomon's Pools and the fountain which feeds them, to the great mosque of Jerusalem, the site of the Jewish temple, is doubtless, in great part ancient; though, like the pools, it is not alluded to in Scripture. The fact recorded by Jewish writers, cited in the Talmud, that the temple was supplied with water by an aqueduct from the fountain of Etam on the way to Hebron, is conclusive. Josephus too relates, that Solomon took pleasure in Etam, which was fifty furlongs from Jerusalem, and had fine gardens and streams of water. Scripture names it between Bethlehem and Tekoa.[2]

The beginning of the aqueduct, at the fountain and at the lower pool, has been described above. From thence it winds along the sides of the hills, preserving its level, until it reaches the southern slope of the hill on which Bethlehem stands. Here is a cistern, or rather reservoir, at some depth below the surface, through which the water flows, and from which it is drawn up with buckets to supply the inhabitants. From this point it is carried by a tunnel through the hill, below the saddle lying between the town and the convent. Hence it is again conducted along the slopes of the hills passing just on the south and east of the convent Mâr Elias; it

[1] John ix. 7; Isa. vii. 3; 2 Kings xviii. 17. Joseph. Bel. Jud., 5. 7. 3. Ibid., 2. 17. 9.

[2] Biblical Researches, I. p. 348 [I. p. 515]. Joseph. Antiq., 8. 7. 3. 2 Chron. xi. 6.

is seen on the east of the plain of Rephaim, and is brought into the valley of Hinnom, which it crosses on low arches at a point a little north of the southwest corner of the city wall. It then passes along the southern and eastern slopes of Zion, and entering the city is carried by an excavated tunnel for some distance along the eastern perpendicular face of Zion; and at last crosses on the mound leading to the Haram. In 1838 water was flowing in the aqueduct as far as to some distance north of Bethlehem; but did not reach Jerusalem.

The channel of the aqueduct is usually conducted along the surface of the ground. For some distance from the pools and in other places, it is laid with tubes of red pottery, twelve or fifteen inches long and eight or ten inches in diameter, cemented into each other. Afterwards, for much of the way, it consists merely of stones laid in cement, forming a small covered channel of perhaps a foot in breadth and depth. There are occasional openings, which serve as ventilators, through which also water may be obtained.[1]

But the present channel and course of the aqueduct are not everywhere the most ancient. On the gentle acclivity northeast of Rachel's Sepulchre, up which passes the Hebron and Jerusalem road, are still seen the traces of a more ancient aqueduct. It was obviously carried up the slope by means of tubes or perforated blocks of stone, fitted together with sockets and tenons, and originally cemented. These blocks are seen for some distance up the acclivity; and the aqueduct crossed a saddle in the ridge just north, in a mass of large hewn stones, which yet remain. This could only have been an ancient channel of the aqueduct from Solomon's Pools; which at the present day is carried around the

[1] Biblical Researches, I. p. 347 [I. p. 514]. Tobler, Dritte Wanderung, p. 84. Barclay, City of the Great King, p. 557.

eastern end of the same ridge. The circumstances show that the ancient builders were acquainted with the fact, that water in a close aqueduct rises to the level of its source. The remains of an ancient aqueduct, constructed on the like principle, are seen between Beit Miry and Brŭmmâna on Lebanon.[1]

[1] Later Biblical Researches, pp. 273, 285; comp. p. 17.

# CHAPTER III.

## CLIMATE.

The parallels of north latitude which embrace Palestine, (31° to 33° 16), if extended westward, pass wholly south of Greece and its islands, of Italy and its islands, and of Spain. They strike the northern coast of Africa along the Mediterranean, and the southern part of the United States of America, or the Gulf States so called. These circumstances, together with the general position and physical features of the country, remove the Holy Land from any relations of climate with southern and western Europe and the northern American States; and bring it more into analogy with northern Africa and the Gulf States of America.

### I. SEASONS.[1]

The occidental division of the year into four seasons is not applicable to Palestine, and is unknown in Scripture. The Bible makes mention only of summer and winter; the latter as the season of rain.[2] There is no allusion in the Old Testament or the New, in Hebrew or in the English Version, to the seasons of spring and autumn.

[1] See generally Biblical Researches, I. pp. 428–431 [II. pp. 96–100]. Comp. also Tobler, Denkbl., pp. 1–35. Dritte Wanderung, pp. 206–211.

[2] Gen. viii. 22; Ps. lxxiv. 17; Zech. xiv. 8; Cant. ii. 11.

At the present day the division of seasons is the same as of old. The variations of rain and sunshine, which in the west exist more or less throughout the whole year, are in Palestine confined chiefly to the interval between the latter part of October and the early part of April, a period of not yet six months; while the remaining months enjoy almost uninterruptedly a cloudless sky.

Winter or the Rainy Season. The rains usually begin to fall in the latter half of October or beginning of November; not suddenly, but by degrees. This gives to the husbandman time and opportunity to plough his ground and sow his fields of winter wheat and barley. The rains increase for some time, coming mostly from the west and southwest; they last for two or three days at a time, falling especially during the night. Then the wind chops round to the north or east, and several days of fine weather succeed. This alternation of groups of rainy days, followed by longer intervals of sunshine, continues through the winter. During the months of November and December, the rains still fall heavily; afterwards they return only at longer intervals, and are less heavy; but at no period during the winter do they entirely cease to occur. During these intervals of fine weather, the husbandman sows a later crop of barley, and also his summer grains.[1] The rains usually continue to fall more or less through the month of March; but are rare after that period. In 1838, there was little or no rain in March; and the whole quantity of rain was less than usual. In 1852 the rains were abundant, and lasted through the first week of April. The rains are often accompanied by thunder and lightning.

Observations made in Jerusalem give the following results

[1] Barclay, City of the Great King, pp. 421, 422.

as to the proportion of rainy days at that point during the winter seasons of 1843 and 1845.

1843–4. The rain began with a thunder-shower, Oct. 25. In November rain fell on seventeen days; in December thirteen days, and once snow; January, eight days, and twice frost at night; February, seven days; March, ten days; April, eight days, the month being colder than usual. There were also showers on five days in May.[1]

1845–6. In November rain fell on four days; December, thirteen days; January, thirteen days; February, eleven days; to March 18, two days. But during the whole winter, there was no day in which the sun was not visible for a longer or shorter time.[2]

Snow often falls at Jerusalem and in the hill-country, mostly in January and February, to the depth of a foot or more; but does not long remain. In February, 1797, a deep snow lay for twelve or thirteen days at Jerusalem; and in 1818, it lay over a foot deep for five days.[3] On the 9th of January, 1807, Seetzen, being at Jericho, saw the opposite mountains of 'Ajlûn, the Belka, and Kerak, covered almost to their foot with snow, which had fallen during the night; though not a flake had fallen in all the Ghôr. The mountains around Jerusalem were in like manner covered the same night; and the snow lay for several days.[4] In the winter of 1820, there was snow upon the hills of Galilee, but only for four hours.[5]

Hail falls in the hill-country, in the rainy season, more

[1] Lanneau, in Monatsb. der Berliner Ges. für Erdk., 1847–48, p. 48.

[2] Tobler, Denkbl., p. 21.

[3] Brown's Travels, p. 361. Scholz, Reise, p. 138.

[4] Seetzen, Reisen, II. p. 300.

[5] Scholz, Reise, pp. 137, 138. For falls of snow in various other years, see Tobler, Dritte Wanderung, p. 210.

frequently than snow; but does not in general occasion much damage. Fine hail mingled with rain is very common; occasionally it falls as large as peas or beans, and sometimes much larger.[1] Scholz relates, that while he was at Nazareth, early in 1821, violent hail occurred several times; some of the hailstones being as large as a pigeon's egg.[2]

Frost is not frequent; the ground itself never freezes. But Mr. Whiting, during a residence of several years in Jerusalem, had seen the pool of Hezekiah, upon which his house joined, covered with thin ice for one or two days.[3]

During the whole winter the roads, or rather tracks, in Palestine, are muddy, deep, and slippery; so that the traveller at this season is subjected to great inconvenience and discomfort. When the rains cease, the mud soon dries up, and the roads become hard, though never smooth. Whoever therefore wishes to profit most by a journey in Palestine, will take care not to arrive at Jerusalem earlier than the latter part of March.

*Early and Latter Rain.* Scripture speaks in various places of *the early* (or *former*) and *the latter rain*, as essential for the abundance of the crops and the prosperity of the land.[4] These naturally correspond to the beginning and end of the rainy season. But the terms 'early' and 'latter' may also be accounted for in part from the fact, that while the ecclesiastical year of the Hebrews began with the month Nisan, not far from the vernal equinox, their more ancient secular

[1] Barclay, City of the Great King, p. 52.

[2] Scholz, Reise, p. 138.

[3] Comp. Barclay, City of the Great King, p. 50.

[4] Deut. xi. 14; Jer. v. 24; Hos. vi. 3; Joel ii. 23; James v. 7. Latter rain, Prov. xvi. 15; Jer. iii. 3; Zech. x. 1.

and agricultural year began six months later, with the month Tisri, about the time of the autumnal equinox.[1]

But there are no definite and distinct seasons of early and latter rain, separate from the rest of the rainy season. The whole period from October to April constitutes only one continued season in which rain falls; without any regularly intervening term of prolonged fair weather. Hence the early rain was the first showers in October and November, which revived the parched and thirsty earth, and prepared it for ploughing and the seed. The latter rain, on the other hand, was the later showers which continue to fall in March and April, and serve to refresh and forward both the ripening crops and the springing verdure of the fields.

Should the early rain fail, or be too long delayed, so that the rainy season should begin at once with heavy and constant showers, there would be no opportunity for the husbandman to plough his ground or sow his seed; and there could be no crop. Or, if the latter rain, the showers of March and April, do not take place, the ripening grain and springing verdure are arrested, and do not reach their full maturity. In such case the crops are diminished, or fail altogether.[2] On the other hand, when the latter rain occurs in full, the husbandman is never disappointed in his harvest. In 1852, these rains were sometimes heavy, and continued into the second week of April. The result we saw during our subsequent journey, in the very abundant crops throughout the country.[3]

Summer or the Dry Season. During the months of April and May, the sky is usually serene, the air mild and balmy; and the face of nature, after a season of ordinary rain, con-

[1] Ex. xii. 2; Lev. xxv. 9, 10.

[2] Comp. Amos iv. 7.

[3] Later Biblical Researches, pp. 9, 30.

tinues green and pleasant to the eye. Showers occur occasionally, but they are mild and refreshing. In 1838, there were showers in Jerusalem on the first of May; and at evening there was thunder and lightning, with pleasant and reviving rain. The 6th of May was also remarkable for thunder and for several showers, some of which were quite heavy. The rains of both these days extended far to the north of Jerusalem. But the occurrence of rain so late in the season was regarded as unusual; though, as we have seen, in 1844 rain fell on five days in the month of May.

In ordinary seasons, from the cessation of the showers in April or May, until their commencement in October or November, rain never falls in Palestine, and the sky is usually serene. If during the winter season there has been the ordinary and full supply of rain, the husbandman is certain of his crops; and he is also perfectly sure of fine weather for the ingathering of the harvest. "Snow in summer and rain in harvest" were things incomprehensible to the Hebrew. Thunder and rain in wheat harvest occurred once by miracle in answer to the prayer of Samuel.[1]

The atmosphere is in general clear and fine; especially at the high elevation of Jerusalem; nor does the heat of summer become oppressive, except during the prevalence of the south wind, or sirocco. Yet the total absence of rain soon destroys the verdure of the fields; and gives to the whole landscape the aspect of drought and barrenness. The only green thing which remains, is the foliage of the scattered fruit trees and shrubs, and occasional vineyards and fields of millet. The deep green of the broad fig leaves and the lighter shade of the millet is delightful to the eye amid the

[1] Prov. xxvi. 1; 1 Sam. xii. 17, 18.

general aridness; while the foliage of the olive, with its dull grayish hue, scarcely deserves the name of verdure.

Later in the season, the whole land has become dry and parched; the cisterns are nearly empty; the few streams and fountains fail; and all nature, physical and animal, looks forward with longing to the return of the rainy season. Mists and clouds begin to appear, and showers occasionally fall; the husbandman prepares his ground and sows his seed; and the thirsty earth is soon drenched with an abundance of rain.

*Fogs.* For some time after the rains, vapor continues to rise from the earth, and gathers, as fog, in the valleys and low places. Thus, in 1838, in the morning of May 18, being at Beit Nettîf, we beheld all the lower tract of hill-country enveloped in a dense fog, above which the tops of the hills were seen like islands; but the fog soon passed away.[1] Later still the vapor in the atmosphere continues to gather around the tops of the mountains, forming light morning clouds. This we experienced on Mount Tabor, on the 19th of June; about half an hour after sunrise, a fog came on, forming a cloud around the summit, which veiled everything below from our view; it soon, however, dispersed, and left a clear atmosphere and a glorious prospect.[2] Early in August light white clouds come up over the land from the south-west; but seem to produce no further effect upon the atmosphere.[3]

*Dew.* During the fair weather of winter, and throughout the whole of the dry season, dew falls at night, and in general heavily; and serves to refresh the languishing vegetation.

[1] Biblical Researches, II. p. 19 [II. p. 347].

[2] See Biblical Researches, II. p. 368 [III. p. 235].

[3] Schultz, Vorles., p. 28.

On the morning of March 23, Maundrell's tents were wet with dew at Lejjûn, as if it had rained all night; and on June 19, our own tent was wet as with rain on the summit of Mount Tabor.[1] At Jerusalem the heavy dews contribute something to the coolness of the nights.[2]

## II. TEMPERATURE.

The local temperature of Palestine is greatly affected by the physical division of the country into the four long and narrow parallel tracts or strips of territory, of different elevation, which have been already described.[3] The western plain rises but slightly above the level of the Mediterranean; while the Ghôr, or valley of the Jordan, is depressed several hundred feet below the same. The western hill-country around Jerusalem and Hebron is elevated two thousand five hundred and two thousand seven hundred feet above the sea; while the hill-country east of Jordan, which reaches an elevation of three thousand feet around Kerak and in the Belka, rises to five thousand feet in the mountains of 'Ajlûn. The difference of level between Jerusalem and the Dead Sea, is about three thousand nine hundred feet, or very nearly three fourths of a mile.

*Western Hill-Country.* The climate of Jerusalem is in general cool and pleasant; and is never oppressively warm, except during the continuance of a Sirocco or south wind. While the Frank residents at Beyrût and Damascus are driven during the hot months to the mountains, those of Jerusalem, though they may leave the city or camp outside of it, because of the miasma arising from the accumulated

[1] Maundrell, March 22. Biblical Researches, II. p. 368 [III. p. 235].

[2] Biblical Researches, I. p. 428 sq. [II. p. 96 sq.].

[3] See above, p. 19.

rubbish of centuries, would have to travel far before they could find a cooler or healthier spot. The nights are uniformly cool, often with a heavy dew; and our friends, who had resided for years in the city, had never had occasion to dispense with a coverlet upon their beds during summer.

During our sojourn at Jerusalem in 1838, from April 14 to May 6, the mercury ranged at sunrise from 44° to 64° F. and at 2 P. M. from 60° to 79° F. This last degree of heat was during a Sirocco, April 30. Again, from the 10th to the 13th of June, we had at sunrise a range from 56° to 74°; and at 2 P. M. once 86°, with a strong northwest wind. Yet the air was fine, and the heat not burdensome.

During May, 1843, according to observations by Mr. Whiting, the monthly mean at Jerusalem was 67° 89° F. The warmest day was the 14th, with a Sirocco, when the mercury was at sunrise,70°; at 2 P. M. 86°; at 3 P. M. 90°; at sunset,75°; mean, 80° 25, F. The coldest day was the 4th, marked as winter weather, when the mercury stood at sunrise, 49°; at 2 P. M. 49°; at sunset, 50°; mean, 49° 33 F. The above high monthly mean was owing to the prevalence of easterly (Sirocco) winds during ten days of the month; while the wind blew from the west only eighteen days; from the north one day; and was 'variable' two days. There were two days with rain.[1]

For the year beginning with June 1843, and ending with May 1844, we have the following summary of the mean temperature, as resulting from observations kept by Mr. Lanneau:[2]

[1] Bibliothea Sacra, 1844, p. 222.

[2] Monatsb. der Berliner Ges. für Erdk., 1847–48, p. 49.

| | Monthly Mean. | Warmest Day, Mean. | Coldest Day, Mean. | Remarks. |
|---|---|---|---|---|
| 1843, | ° | ° | ° | |
| June, | 71.66 F. | 18th, 79.0 F. | 8th, 61.0 F. | No rain. |
| July, | 77.3 | 20th, 86.3 | 6th, 71.3 | No rain. |
| Aug. | 72.7 | 3d, 82.0 | 29th, 67.0 | No rain. |
| Sept. | 72.24 | 3d, 72.7 | 20th, 66.0 | No rain. |
| Oct. | 66.63 | 2d, 84.6 | 27th, 62.6 | First shower, Oct. 25. |
| Nov. | 59.4 | 1st, 72.0 | 24th, 49.0 | Rain on 17 days. |
| Dec. | 47.9 | 2d, 53.6 | 21st, 41.6 | Rain on 13 days, snow once. |
| 1844, | | | | |
| Jan. | 47.6 | 18th, 54.0 | 2d, 35.0 | Rain on 8 days, twice frost. |
| Feb. | 54.2 | 14th, 60.6 | 19th, 49.0 | Rain on 7 days. |
| March, | 57.7 | 21st, 66.0 | 5th, 50.0 | Rain on 10 days. |
| April, | 55.2 | 29th, 66.0 | 15th, 42.0 | Rain on 8 days. |
| May, | 65.8 | 20th, 74.6 | 5th, 60.6 | Rain on 5 days. |

The month of April was colder than usual.

The above gives the mean temperature of 62° 46 for that year at Jerusalem.

From June 1851 to January 1855, inclusive, Dr. Barclay kept a record of observations in the Holy City. The mean temperature of the different months is given in the following table :[1]

| | Jan. | Feb. | Mar. | Apr. | May. | June. | July. | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° | ° |
| 1851, | .. | .. | .. | .. | .. | 72.8 | 79.8 | 78.2 | 75.0 | 72.3 | 67.0 | 53.3 |
| 1852, | 49.6 | 52.1 | 56.0 | 62.2 | 69.6 | 73.8 | 78.0 | 78.0 | 74.1 | 76.6 | 62.7 | 55.3 |
| 1853, | 51.4 | 60.4 | 60.2 | 64.0 | 77.6 | 77.3 | 78.0 | 80.0 | 80.2 | 74.9 | 61.1 | 52.9 |
| 1854, | 49.6 | 50.8 | 51.0 | 58.1 | 74.1 | 76.9 | 80.8 | 80.9 | 77.3 | 72.9 | 64.3 | 56.6 |
| 1855, | 47.1 | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. | .. |
| Mean, | 49.4 | 54.4 | 55.7 | 61.4 | 73.8 | 75.2 | 79.1 | 79.3 | 77.0 | 74.2 | 63.8 | 54.5 |

It appears from these data that the yearly mean during this period was 66° 5 F., while that of Boston is given at 49° ; of Philadelphia at 52° ; of New Orleans at 62°. January was the coldest month ; July and August the hottest. The highest elevation of the mercury was 92° F. the lowest, on one

[1] Barclay, City of Great King, p. 428.

occasion just before sunrise, was 28°. Pellicles of ice an eighth of an inch thick were formed, and remained in the shade the whole day. We have seen above that the like thin ice is sometimes formed on the pool of Hezekiah.[1]

What is true of Jerusalem, naturally holds good in general of the whole hill-country west of Jordan; except so far as the southern part is higher than the northern. Few observations have been made, however, away from the Holy City. In 1838, we came from Teffûh to Hebron in a violent and hazy Sirocco, with the mercury at 86° F. It cleared away at evening, with the wind N. W. and the mercury at 65°. During the next fine days, May 24–27, and June 5, the mercury ranged at sunrise between 43° and 61°; at 10 A. M. between 68° and 80°; at 2 P. M. between 71° and 80°; at sunset, between 51° and 71°; the weather the whole time being clear and fine, with the wind N. W. In passing, in June of the same year, from Nâbulus by Nazareth and Tabor to Safed and Bint Jebeil, the thermometer at sunrise was nearest 64° F.; at 2 P. M. mostly from 78° to 82°; and at sunset from 70° to 74°. On one day, June 17, at Nazareth, it stood for several hours at 88° with a clear sky and south wind. On the next day, on the way to Tabor, there was a violent Sirocco and haze from the *southeast*, with the mercury at 10 A. M. 98°, and at 2 P. M. 95°; while at sunset on Tabor it was 74°, with westerly wind.[2]

*Western Plain.* In the western plain, which is little elevated above the Mediterranean, very few observations have been made. The mean temperature of that tract, however, must naturally be some degrees higher than at Jerusalem; since the difference of elevation is more than two thousand

[1] Barclay, City of Great King, p. 428.

[2] See the observations as recorded in the *Itinerary*, Biblical Researches II. [III.]

feet; and the harvest in the plain ripens a fortnight earlier than on the mountains.[1] On the 7th of June, at Terkûmieh, the thermometer at 2 P. M. stood at 97° F., with a bright sky and N. W. wind. At sunrise it had stood at 72°; and at sunset was 88°, at Beit Nettîf. The next day was remarkable. The mercury at sunrise was at 83°; at 11 A. M. 94°; at noon, 105°; at 2 P. M. 97°; and at sunset, 90°. The air was very hot, with a slight haze, and a strong wind from the N. W. coming directly from the sea, which was less than ten miles distant. The point 105° at noon, was at Ekron; the thermometer being on the ground, in the best shade that could be obtained.

*Valley of Jordan.* In this sunken valley, the Ghôr, which in its lowest part, the Dead Sea, is thirteen hundred feet below the level of the Mediterranean, and about three thousand nine hundred feet lower than Jerusalem, we must of course expect a very different temperature. We find accordingly, to a great extent, an Egyptian climate, and many Egyptian productions. In this tract, also, very few observations have been made.

Lynch, in descending the Jordan, April 8–18, had a range of the mercury, at 8 A. M. from 66° to 69° F.; at noon, from 69° to 88°; at 8 P. M. from 62° to 70°. During seven days on the shore of the Dead Sea, April 19–25, the mercury stood, at 6 A. M. on two days, 78°; at 8 A. M. on two days, 88°; and at noon on three days, 86°, 89°, 90°. On the three days before the Expedition left the Ghôr, May 6, 7, 8, the heat had increased. On the 6th, the mercury, at 8 A. M. was 92°; at noon, 97°; at 2 P. M. 102°. On the 7th, at 8 A. M. 84°; at 11 A. M. 106°; at 4 P. M. 93°; while at 6 P. M. there was a

[1] For the observations made during our journey in May and June, 1838, see the *Itinerary*, as above.

sudden and violent gust of hot wind from the eastward, which overthrew all the tents. On the 8th, at noon, the mercury rose to 110° in the shade.[1]

In 1838, we were for three and a half days in the Ghôr, May 10–14, passing between 'Ain Jidy and Jericho. The record of these days was as follows:

| | Sunrise. | 10 a. m. | 2 p. m. | Sunset. | |
|---|---|---|---|---|---|
| | ° | ° | ° | ° | |
| May 10, | | | | 80.0 | at 'Ain Jidy. |
| 11, | 68.0 | | 85.0 | 78.0 | |
| 12, | 70.0 | 84.0 | | 78.0 | |
| 13, | 70.0 | 86.0 | 91.0 | 76.0 | at Jericho. |
| 14, | 64.0 | | | | |

The wind during this time was variable. On May 29 and 30, we were at the southern quarter of the sea, on our way to Petra. The mercury ranged as follows: May 29, sunrise, 70° ; 2 P.M. 92° ; sunset, 88°. On the 30th, sunrise, 69° ; 10 A.M. 96° ; noon, 102° ; 2 P.M. 96° ; sunset, 76° ; the latter at the top of the pass Nemela. The heat at noon was connected with a fierce Sirocco and haze from the S. W.

On the 20th of June, we were on the western shore of the lake of Tiberias. At Tiberias, on the 19th, at sunset, we had 80° F. On the 20th, at sunrise, 75° ; 2 P.M. 95° ; sunset, 85° ; with clear sky and a strong S. W. wind or Sirocco. At sunrise on the 21st, we had 71°.

Among the more southern productions of the Ghôr, are the Nŭbk or Egyptian lote-tree, called also Dôm̆ ; and the 'Ösher, or apple of Sodom, which grows also in Nubia. The little plain of Gennesareth, described by Josephus as so fertile and rich in various fruits, owed much of its celebrity to its climate and the convenient irrigation.[2]

*Eastern Hill-Country.* In all this region we have no ob-

[1] Lynch, Official Report, p. 74; comp. pp. 41, 42.

[2] Joseph. Bel. Jud., 3. 10. 8.

servations relating to the climate, except the occasional remarks of passing travellers. But the elevation of the region, and its relative position, naturally lead to the conclusion, that its climate is not, in general, unlike that of the western hill-country. In the broad volcanic plains of Haurân, however, it would be no less natural to look for a mean temperature of the summer months somewhat higher than that of the corresponding western tracts.

*Times of Harvest.* The different mean temperatures prevailing in the three western parallel divisions of Palestine, as they are exemplified in the earlier or later harvest time, fell under our personal observation in 1838. The barley harvest usually precedes the wheat harvest by a fortnight or three weeks.

On the 13th of May, we were at Jericho, where the people of Taiyibeh, who had sown the neighboring fields on shares, were just completing their harvest. The harvest week might be reckoned from the 7th to the 14th. The barley harvest had been finished three weeks before; that is, about April 22. Three days earlier (May 10) we had left the wheat still green upon the fields around Hebron and Carmel.[1] In 1852, on the 14th and 15th of May, the harvesting was in full progress in the Ghôr south of Beisân, and on the eastern bank of the Jordan; while at Pella, which is somewhat more elevated, the grain was ripe, but the harvesting was not yet begun.[2]

From the 18th to the 23d of May, 1838, we were in the western plain and at Gaza; the people being then in the midst of wheat harvest. In the western part of the great

[1] Biblical Researches, I. pp. 550, 551; comp. p. 431 [II. pp. 276–278; comp. p. 99].

[2] Later Biblical Researches, pp. 314, 317, 320.

plain, it was perhaps two or three days more forward than among the tract of low hills on the east. The harvest time continued apparently about ten days, from the 15th to the 25th of May. But the grain was not always trodden out immediately.[1]

On the 4th and 5th of June, 1838, as we returned from Petra, the people of Hebron were just beginning to gather their wheat; and on the 11th and 12th the threshing-floors on the Mount of Olives were in full operation. As we travelled northward, on the 13th and the following days, the harvest seemed to be over, with the exception of an occasional field long ripe and waiting for the sickle.[2]

It thus appears that wheat harvest in the Ghôr takes place about four weeks earlier than at Jerusalem; the two being hardly more than twenty miles apart. The harvest of the western plain lies between; about ten days later than in the Ghôr, and eighteen or twenty days earlier than on the mountains.

It is also reported of the melons raised along the shores of the lake of Tiberias, which are of the finest quality, that they are in great demand at 'Akka and Damascus, where that fruit ripens nearly a month later.[3]

### III. WINDS.

Scripture speaks of only *four* winds, corresponding to the four quarters of the heavens.[4] It names also the north, south, east, and west winds,[5] but none from any other quar-

[1] Biblical Researches, [II. pp. 33, 50, 51, 55 II. pp. 367, 394, 395, 401].

[2] Biblical Researches, I. p. 431, II. p. 324 [II. p. 99, III. p. 168].

[3] Burckhardt, Syria, p. 323.

[4] See especially Matth. xxiv. 31; Mark xiii. 27.

[5] North, Prov. xxv. 23. South, Ps. lxxviii. 26; Luke xii. 55. East, Ps. lxxviii. 26; Ex. xiv. 21. West, Ex. x. 19.

ter. These terms of course must be understood with latitude; a north wind implying any wind from the northern quarter from northwest to northeast; and so of the rest. Hence a wind between two quarters might be regarded as belonging to either; for example, a wind from the southeast might be spoken of as an east wind or a south wind.

*Winds of the Rainy Season.* The prevailing wind of the rainy season is from the western quarter; the rains come mostly from the west or west-southwest. It is true now, as of old, that "when ye see a cloud rise out of the west, straightway ye say, There cometh a shower; and so it is."[1] It does not follow that it always rains when the west wind blows; but it is true that the west is the rainy quarter, and that in winter a west wind seldom fails, sooner or later, to bring rain. This wind blows from one day to seven or eight days at a time, continuing through each group of rainy days. Sometimes the west wind itself clears away the clouds; though fair weather more commonly follows a change of wind to the north or east. The west wind is often stormy and violent, and drives the rain before it with great force. The coldest weather usually occurs during the prevalence of the west wind. This wind commonly follows an east wind; and is itself often succeeded by an east wind, or sometimes by a wind from the north.[2]

Next to the west wind, the east wind is in winter the most frequent. It drives away the clouds, and brings a clear sky; blows sometimes one day and sometimes for several days; and is seldom violent. As this wind comes from the eastern deserts and passes over the sunken region of the

[1] Luke xii. 54.

[2] Tobler, Denkbl., pp. 28-30. Biblical Researches, I. p. 429 [II. p. 97]. Thomson, Land and Book, I. p. 131.

Ghôr, it brings with it a temperature somewhat warmer than that of the west wind.

The other winds of winter are more variable. The north wind brings occasionally fair weather, though less commonly than that from the east. The wind from the south and south-southwest (Sirocco) is less frequent in winter; is occasionally violent, with a haze from the desert; and rarely lasts more than one day. Sometimes it does not even raise the temperature.[1]

*Winds of Summer.* The most prevalent winds of summer are the northwesterly, and those from the southern quarter.

The northwest wind or a wind from west to N. N. W. is a day-breeze coming from the Mediterranean, springing up in the morning at eight or nine o'clock, and continuing till about ten at night. It renders the climate of the long and hot summer months much more endurable; especially at Jerusalem and throughout the hill-country.[2] In 1838, returning from Petra, we had this wind, except one day, from the time we left the Ghôr until we arrived at Nazareth; that is, from June 3 to June 16, a period of fourteen successive days. The air was fine and mostly clear; and although the mercury ranged on several days at midday from 80° to 96° F., the heat was not burdensome. Yet at Ekron, where the thermometer rose at noon to 105°, and in the sun only to 108°, this northwest wind, coming directly from the neighboring sea, had the usual characteristics of a wind from the south. In May, 1843, this westerly wind is reported as blowing on eighteen days of the month at Jerusalem.[3]

The most disagreeable wind of Palestine is that called by

[1] Tobler, Denkbl., p. 31. [2] Barclay, City of the Great King, p. 49.
[3] Bibliotheca Sacra, February, 1844, p. 222.

the Franks *the Sirocco;* it comes from any point of the southern quarter from southeast to southwest. This name is obviously an Italian form for the Arabic *Shŭrkîyeh*, 'east wind,' which is used in the same manner; and is properly applied to a wind from the east or southeast. But as the dreaded qualities of the east and southeast winds are likewise often exhibited in Palestine by winds from the southern quarter quite around to the southwest, the name Sirocco is now applied to any southern wind having the like qualities.

The main characteristics of the Sirocco are: *First.* Oppressive sultriness, causing great lassitude and a disinclination for all effort, bodily or mental. *Second.* Great dryness, exhausting all moisture and closing the pores of the body; producing also a withering effect upon vegetation. *Third.* Usually a hazy atmosphere, caused by the finest particles of sand or an impalpable dust from the deserts over which the wind passes. This haze imparts a peculiarly lurid and ghastly hue to the sun and sky; and the fine dust penetrates the clothing and into every crevice and cranny of the houses. It is of course most dense in the south; and becomes gradually thinner and less perceptible the further it advances towards the north. Sometimes the southerly winds have the heat and dryness, without the haze. It may still be said, as of old: "When ye see the south wind blow, ye say, There will be heat; and it cometh to pass."[1]

The Sirocco more commonly lasts but a single day; but sometimes two or three days, and even longer. The more easterly Sirocco prevailed at Jerusalem in May, 1843, for ten days of the month. We encountered the same wind on Mount Tabor in June, 1838; the thermometer showing at 10 A. M. 98° F., and at 2 P. M. 95°; with a violent southeast

[1] Luke xii. 55. Comp. Barclay, City of the Great King, p. 51.

wind, which in the afternoon brought up a haze. In 1848, May 6, the tents of the United States' Expedition on the shore of the Dead Sea were thrown down by a violent gust of hot wind from the eastward.[1]

More frequent in Palestine is the Sirocco from the south or southwest, continuing for one day and often for more. We encountered it, in 1838, three times in its full strength. The first time was on April 11, in the southern desert, between Eboda and Ruhaibeh. About 11 A. M. the wind suddenly changed from northeast to south, and came upon us with violence and intense heat until it blew a perfect tempest. The atmosphere was filled with fine dust, forming a bluish haze; the sun was scarcely visible, his disk exhibiting only a dun and sickly hue; and the glow of the wind came upon our faces as from a burning oven. Often we could not see ten rods around us; and our eyes, ears, nostrils, mouths, and clothes were filled with the sand. The thermometer at noon was 88° F., at 2 P. M. 76°.[2]

The second instance was on May 23, between Teffûh and Hebron. The wind had been S. W. all the morning; but about 11 o'clock it increased, and became at last a violent tempest, bringing the dust and sand from the desert, and filling the air so as to obscure the sun. The whole atmosphere became of a deep dun or yellowish hue. As we approached the height of land a very few drops of rain fell; these left upon our clothes spots of mud, as if we had been spattered from a puddle. The thermometer at 10 A. M. and 2 P. M. was 86°; at sunset it cleared away with a wind from the N. W.[3]

[1] Bibliotheca Sacra, l. c. Biblical Researches, II. p. 352 [III. p. 212]. Lynch, Official Report, p. 74.

[2] Biblical Researches, I. p. 195 [II. p. 288].

[3] Biblical Researches, II. p. 72 [II. p. 429].

The last instance was on May 30, in the 'Arabah south of the Dead Sea. The mercury at sunrise was at 69° F., with a cool and pleasant wind from the S. W. But by 10 o'clock the wind had become strong; the mercury had risen to 96°; and the heat of the sun was intolerable. At noon this wind was a fierce Sirocco, which brought up a dense haze; and the thermometer had risen to 102°. At 2 P.M. it had sunk to 96°; and at sunset was at 76°, with a cool northwest wind, which soon cleared the atmosphere.[1]

It is not to be understood, that in such tempests there is, in Palestine, any danger of life. Yet the three here described were probably as violent as most of those which have given rise to the exaggerated accounts of travellers.[2]

The 'east wind' spoken of in the Old Testament, so far as it relates to Palestine, corresponds very closely to the Sirocco in its characteristics, particularly in its violence, its heat, dryness, and withering effect. Not improbably the name was employed of old in the same general extent as is the modern Shŭrkîyeh or Sirocco.[3]

The other summer winds of Palestine can only be described as variable, both in frequency and duration.

## IV. PURITY OF THE ATMOSPHERE.

The splendor of the summer sun and sky of Palestine is very striking; and is occasioned by the usual clearness and purity of the atmosphere. This clearness and transparency are so great, that remote objects are seen with singular distinctness; and their actual distance seems diminished by at

[1] Biblical Researches, II. p. 122 [II. p. 503].

[2] Comp. Biblical Researches, I. p. 196 [I. p. 289].

[3] Violence, Psalm xlviii. 7; Jer. xviii. 17; Ezek. xxvii. 26. Withering effect, Ezek. xvii. 10, xix. 12; Hos. xiii. 15.

least one half. Thus when we looked from Taiyibeh down upon the Ghôr and across to the mountains of 'Ajlûn, it seemed as if the mountains themselves and the old fortress er-Rŭbŭd were not more than an easy day's journey distant; although they could not have been reached in less than two or three days. In the transparency of its atmosphere, Palestine falls little, if any, short of Greece.[1]

This clearness, however, is only too often interrupted by the haziness brought up by the Sirocco winds, as above described. This continues sometimes for one day; sometimes for several days. Besides this, there is occasionally a kind of dry mist or haziness, like smoke, which renders the view of distant objects quite indistinct. The appearance then is not unlike that of the Indian summer of the United States.[2]

The climate of Palestine is in general healthy; there being few marshes or other causes to detract from its salubrity. The people of the country are long lived, vigorous, and capable of enduring great fatigue. In the sunken valley of the Jordan, where the greater heat is in itself enervating, the Ghawârineh, who dwell there, have less vigor and energy than the inhabitants of the hill-country, and may be called in comparison a feeble race; but they are not in other respects a sickly people.

As of old, so now Palestine, like other oriental countries, is not free from the ravages of contagious diseases, nor from "the pestilence that walketh in darkness."[3] The plague often prevails in its chief cities; and the Asiatic cholera

[1] Biblical Researches, I. p. 9 [I. p. 13]. Barclay, City of the Great King, p. 414.

[2] Barclay, City of the Great King, p. 414.

[3] Ps. xci. 6.

did not pass it by.[1] But such diseases are not indigenous; they come from other lands.

In Jerusalem, and perhaps in some of the other cities, there would seem to exist some local cause, operating to produce particular diseases. Thus in Jerusalem full one half of the patients who come under the observation of resident Frank physicians, are cases of the disease known as chills and fever, fever and ague, intermittent fever; in its various forms of quotidian, tertian, and quartan ague or intermittent. This complaint is very common, and prevails more or less throughout the year; though it is most frequent in the beginning of summer after the rainy season. It spares neither rank nor age; even infants at the breast are affected as well as their mothers. Young children are seen swollen and with pale faces, reminding one of the sickly inhabitants of the Pontine marshes. These fevers are at first mild, and yield readily to medical treatment; but if neglected, they become more difficult of cure.[2]

The prevalence of this disease in the Holy City has been ascribed to various causes. That the source must be local, existing within the city itself, would seem a necessary conclusion. The city is at an elevation of two thousand six hundred feet above the sea, and there are no marshes near it. Those Frank families, also, which sometimes dwell in tents during summer in the neighboring fields, escape the disease. It is often ascribed to the poor diet and filthy dwellings of the people; but it spares just as little those who live in the best houses and have plenty of food. The resident Franks do not escape. Our last visit in May, 1852, was

[1] See an account of the plague in Jerusalem in 1838, in Biblical Researches, I. pp. 248-250 [I. pp. 367-370].

[2] Tobler, Medizinische Topograph. v. Jerus., pp. 32-35.

at the house of Dr. Barclay, on the eastern brow of Zion, where we found him and several of his family suffering from fever and ague.[1] The cause has also been sought in the evaporations from the pool of Hezekiah; but it does not appear that those living directly upon that pool are more affected than the rest of the city. Others suppose the disease is occasioned by the exhalations from the multitude of cisterns, many of which are seldom cleansed, and when low the water becomes filthy and unwholesome. Such a cause may indeed have its influence, especially late in the dry season; but in the spring months, when the fever prevails most, the cisterns are full, and this supposed cause can have only a slight effect.

May not, after all, the true source of the evil lie in the vast masses of rubbish accumulated upon the surface to the depth in many places of forty and even eighty feet; the result of the frequent desolations of the city during the almost thirty centuries of its history? In winter these surface masses absorb the rain water; and in the subsequent months the burning sun causes it to exhale as *miasma* or *malaria*, producing even at this high elevation effects similar to those following like causes in other lands. Various towns of Greece, which occupy the sites of ancient cities, and even Rome itself, are reported to exhibit analogous phenomena.

[1] Later Biblical Researches, p. 201.

# CHAPTER IV.

## GEOLOGICAL FEATURES.

Palestine in its relations to modern geology has been only partially explored. Seetzen, Russegger, and Anderson are the only professional observers who have given more than a passing attention to the subject. Of the former we have, in the recently published volumes of his journal, the daily jottings of the information he obtained; in which he often enumerates briefly various rocks and earths; but he presents no general view. The second gives in several places a general survey; but enters less into particulars. The last, in those parts visited by the United States' Expedition, made a very careful and minute examination of particulars; but his general description is likewise very brief. Schubert too was a geologist; but his remarks on the subject are few, and bear only upon his own immediate route. Burckhardt often refers to particular geological features; and Dr. Wilson does the same to a greater extent. Of all these writers, except Anderson, the latest, Ritter has made use in his great work.

What we have to give here, is of course only a very brief and general *outline*.

### I. GENERAL LIMESTONE FORMATION.

The great masses of rock which constitute the mountains of Palestine and Lebanon, are *Jura limestone;* compact, hard,

not rich in fossils, and full of caverns and grottos. This rock is everywhere the basis; on which have been deposited, in some parts, extensive tracts of volcanic products; as also chalk and chalky limestone, magnesian limestone (dolomite), sandstone, conglomerate, marl, etc. etc.

On the west of the Jordan and 'Arabah, the chalk formation, which prevails through the southern desert, terminates with the desert; and the Jura limestone, beginning with the mountains south of Hebron, holds its course northward; forming the mass of the western hill-country of Carmel and of Lebanon.

East of the Jordan and 'Arabah, where around Petra large masses of porphyry, sandstone, and limestone lie in close proximity, the same Jura limestone extends northward through the Belka and the mountains of 'Ajlûn; and is likewise the basis on which rest the vast volcanic tracts of Haurân, Jaulân, and the Lejah.

From Dhoherîyeh and Hebron northward throughout Judea and Samaria, the Jura formation prevails without interruption; except that many of the heights are capped with strata of chalk abounding in flints; and tracts of the same extend down the eastern desert to the borders of the Ghôr; the same also being the case on the west of the watershed or summit level. Here on the west, the ravines expose little else than the limestones which lie beneath the chalk, or at most occasional banks of estuary sandstone. In the ravines of the eastern slope rocks of sandstone are not of uncommon occurrence; and the character of the limestone generally approaches nearer to the chalk than to the Jura.[1]

The hill on which Bethlehem stands is of chalk; so too the Mount of Olives, as well as other heights. Flints appear

[1] Russegger, III. pp. 246, 247. Anderson, Geological Report, p. 81.

in great profusion for some distance east of Bethlehem; and a remarkable wall of them is seen just below that town.[1]

Throughout Carmel and Galilee the limestone exhibits the same general character. East of the watershed, along all the eastern slope, basalt and other volcanic rocks are very frequent, and often alternate with the limestone.

East of the Dead Sea and Jordan, there is far more of sandstone and basalt. The sandstone appears especially along the shore of that sea. Along the lake of Tiberias, the limestone is seen in the lower strata of the high wall of the eastern plateau; and is found also in the bottoms of the deep ravines, underlying the volcanic masses spread out over the surface.[2] The beautiful terrace of Bâniâs is wholly of limestone; and the great fountain of the Jordan there issues from beneath a limestone precipice; but the igneous rocks begin near by, which form the main mass of Jebel Heish; although the limestone appears also east of Bâniâs.[3]

*Magnesian Limestone or Dolomite.* In connection with the Jura limestone of Jerusalem and that region, occur also frequently large masses of dolomite. This is seen especially in the rocks which form the sides of caverns and grottos.[4]

## II. SANDSTONE. CONGLOMERATE. MARL.

Sandstone. On the west of the Jordan sandstone is rare; and occurs only in the ravines, as already related.[5] East of the Dead Sea there are extensive tracts of sandstone; especially around the estuaries of the Wady Môjib (*Arnon*) and

[1] Russegger, III. pp. 246, 247. Anderson, Geological Report, p. 172.

[2] Thomson, Land and Book, II. p. 39. Anderson, Geological Report, p. 133.

[3] Later Biblical Researches, pp. 397, 406. Anderson, Geological Report, pp. 108, 109.

[4] Russegger, III. p. 248.

[5] See above, p. 312.

the Zerka Ma'în.[1] Further south, around Petra, where the body of the mountain is porphyry, it is capped by thick masses of sandstone of the most singular forms and colors.[2]

Conglomerate. The conglomerates are mostly found along the sides of the Ghôr; as at Râs el-Feshkhah. Not unfrequently they appear in the Ghôr itself; as in the tract above Kŭrn Sŭrtabeh.[3]

Marl. At the southwestern part of the Dead Sea are extensive tracts of marl, along with marly gypsum and chalk. These lie in part back of Jebel Usdum; and are traversed by the Wadys Zuwinah and Muhauwat. They are worn away by the rains into conical and pyramidal hills, like a vast array of white tents, without vegetation, and presenting the features of a frightful desert. Some other like tracts are seen along the western coast; and north of 'Ain el-Feshkhah similar tent-like hills fill up the space between the sea and the western mountain.[4]

### III. VOLCANIC TRACTS.

West of the Ghôr. On the west of the Ghôr and 'Arabah no igneous rocks or volcanic products have been found between about the parallel of 'Akabah and the neighborhood of the lake of Tiberias.[5]

The basalt first shows itself at Beisân, some four hours south

[1] Seetzen, Reisen, II. pp. 364–370. Anderson, Geological Report, pp. 190–194; comp. p. 134.

[2] Biblical Researches, II. p. 125 sq.; comp. pp. 123, 124 [II. p. 509 sq.; comp. p. 506 sq.].

[3] Anderson, Geological Report, p. 198. Ibid., pp. 143, 145, 146, etc.

[4] Anderson, Geological Report, pp. 180, 197. Biblical Researches, I. p. 534, II. pp. 103, 104 [II. pp. 253, 474–476].

[5] Anderson, Geological Report, pp. 133, 134. Biblical Researches, I. p. 176 [I. p. 260].

of the lake, where a considerable tract around is volcanic. The ancient theatre of Beisân was wholly built of black basaltic stones; as were the houses generally.[1]

Commencing again at el-'Abadîyeh, an hour south of the lake, volcanic rocks, alternating with the limestone, are spread over the surface of a large irregular district along the eastern slope of the hill-country, extending on the west to near el-Jish, and on the north to Wady et-Teim; of which district Safed may be said to be the centre. The iron gray basalt-lava of Tiberias represents the southerly and predominant formation; the variegated pumices of Delâta may be taken as an average specimen of the far more recent lavas of the north, while at Tell el-Haiyeh, still further northeast, we found again a third description, of which the relative date is more difficult to assign.[2]

The broad tract of higher uneven land, which lies between the basin of the Hûleh and the lake of Tiberias, and which, shelving down from the higher western hills, shuts up the whole Ghôr, except the deep rocky chasm of the Jordan, is in the west mainly limestone. But the basalt shows itself in many places; and especially along the Jordan.[3] The channel and chasm of the river here, along its steep descent, between the lakes, are volcanic; and the whole region on its eastern side is basalt.[4] Just here and nowhere else, the lavas of the western and eastern sides of the Ghôr touch each other.

We have already described the manner in which Wady et-Teim enters the basin of the Hûleh by six steps or offsets,

[1] Later Biblical Researches, p. 328. Thomson, Land and Book, II. p. 175. Burckhardt, Syria, p. 343.

[2] Anderson, Geological Report, p. 130.

[3] Schubert, III. p. 260. Thomson, Land and Book, I. p. 401.

[4] Seetzen, Reisen, I. p. 342, 343. Biblical Researches, II. pp. 411, 413 [III. pp. 304–308].

with broad terraces between.[1] The uppermost three of these terraces are volcanic; and the steps which divide them run from southwest to northeast. Along the highest of these plateaus the upper branch of the Jordan, the Hâsbâny, has cut its way in a deep chasm through the trap rocks down to the lower level of the more southern plain. At one place, the great fountain Luweizâny bursts forth from beneath the strata of the underlying limestone.[2] At the bridge called Jisr el-Ghŭjar and for some distance below, the basalt is still predominant.[3]

Tell el-Kâdy, from which issues the middle and largest source of the Jordan, stands just on the front of the lower volcanic terrace, and forms part of the offset. It is itself volcanic; but here the igneous rocks cease. All north and northwest, as also southwest of this Tell, is basaltic; all south and east of it is limestone. The Tell is not regarded as a crater.[4] Southwest of the Jisr el-Ghŭjar, a long tongue of land, Tell el-Haiyeh, extends into the basin of the Hûleh. It is composed of gray green-stone; and is a spur or continuation of the ridge which bounds Wady et-Teim on the west. This latter ridge is likewise made up of mixed limestone and trap.[5] The upper fountain of the Jordan, near Hâsbeiya, issues at the foot of a volcanic bluff.[6]

The black basaltic rocks sometimes assume singular forms, especially on the west of the lake of Tiberias. West of Tell Hûm, the ground is covered with large volcanic stones; among which, in spring, the rank grass shoots up luxuri-

[1] See above, p. 75. [2] Later Biblical Researches, p. 389.
[3] Anderson, Geological Report, p. 108.
[4] Later Biblical Researches, pp. 391, 393. Anderson, Geological Report, p. 108.
[5] Anderson, Geological Report, p. 108.
[6] Later Biblical Researches, p. 378.

antly. Here, too, on the tops of the hills around, are seen clusters of larger black volcanic rocks; which, standing apart, bear at a distance a strong resemblance to the sites of ruined towns; for which indeed they have sometimes been mistaken. The 'stones of the Christians,' so called, near the Kŭrûn Hattîn, are of the same kind; and similar appearances occur in other parts.[1]

*Extinct Craters.* One centre of ancient volcanic action on the west of the Ghôr, was the region around Safed; where there exist several extinct craters. One of these, perhaps the most important, was first reported by us in 1838. It is situated in the middle of a high open plain, on the road from Safed to Tyre; about an hour and a half northwesterly from Safed, and half an hour before reaching the village el-Jish. The whole plain is thickly covered with volcanic stones; and the crater is surrounded by heaps of black stones and lava. It is an oval basin, towards four hundred feet long by perhaps one hundred and twenty feet broad, and some forty feet deep. The sides are shelving, but steep and rugged, obviously composed of lava. Near the bottom the tops of polygonal columns are quite visible. The basin is usually partially filled with water; and is known as Birket el-Jish.[2]

Two other like craters were found by Dr. Anderson in the vicinity. One, a mile or two east of Birket el-Jish and north of Teitebeh, is like the former in all respects, and about as large; not a stone appears which is not volcanic. Between this spot and Delâta is a third crater or Birkeh, smaller than the other two; but marked in like manner with blocks of

[1] Later Biblical Researches, pp. 346, 347; comp. p. 342.

[2] Biblical Researches, II. p. 444 [III. p. 367]. Anderson, Geological Report, pp. 128, 129.

lava.[1] The same explorer mentions also three other Birkehs north of Delâta, in the midst of a volcanic tract; but does not indicate whether they were once craters.[2]

East of the Ghôr. Passing now beyond the Ghôr, we find on the east of the Hûleh and the lake of Tiberias a volcanic region of far greater extent; embracing vast plains and lofty mountains; and varying from the richest fertility to the wildest confusion and desolation.

The great fountain at Bâniâs, as we have seen, issues from beneath a precipice of limestone. But the volcanic rocks begin immediately; and rise throughout Jebel Heish, forming the main masses of that mountain. On the high plateau along its top is situated Lake Phiala, an ancient crater. The line of conical Tells which extend along this plateau towards the south, are in like manner all volcanic. The loftiest is Tell Abu Nida, south of Phiala, rising about four thousand one hundred feet above the sea, and nine hundred feet above the adjacent plateau, having a deep crater thickly wooded with oak trees. The adjacent Tell 'Eram is nearly as high, and also has a crater. The southernmost of this line of Tells is Tell el-Feras.[3]

Between the Hûleh and the lake of Tiberias, the whole Ghôr, as we have seen, is blocked up with basalt; through which the Jordan, in its narrow chasm, rushes down to the level of the lower lake. The tract on the east is all basalt, and is strictly still a part of Jebel Heish.

Along the eastern shore of the lake of Tiberias, in the wall that rises from the lake to the high plateau above, the

[1] Anderson, Geological Report, p. 129.

[2] Anderson, Geological Report, p. 129.

[3] Dörgens, in Berl. Zeitschr. für Erdk., Nov. 1860, IX. pp. 405, 406. Thomson, Land and Book, II. pp. 16, 17.

lower strata are everywhere limestone; but all above is of basalt. The volcanic formation extends south as far as to the river Hieromax and beyond. The chasm of that river is cut deep through the volcanic rocks; but the mountain of Gadara (Um Keis), an hour further south, is of limestone.[1]

The whole tract thus far described, the high plateau of Jaulân, is everywhere from two thousand to three thousand feet above the sea. Of course the descent towards the lake of Tiberias is great; and the volcanic formation is of great thickness. "This immense volcanic field consists everywhere of irregular heaps of amorphous lava and disintegrating scoriae, with gigantic mounds of globular basalt, which in a few localities shows a tendency to separate into rudely-shaped columns."[2]

Eastward of Jebel Heish and the lake of Tiberias, and extending to the eastern desert, lies the great region now known as Haurân. It covers a much larger surface than the ancient Haurân or Auranitis; which strictly occupied only its southern part. The modern Haurân is regarded by the natives as consisting of three parts; namely, *en-Nŭkrah* or the great plain, extending through the whole length, and reaching to the base of the mountain; *el-Lejah* in the north-east; and the mountain *Jebel Haurân*, on the east. This great region is wholly volcanic.[3] Between the Nŭkrah and Jebel Heish, in the north, is the narrow district of el-Jeidûr, the ancient *Iturea*, also volcanic.

The plain of Haurân, *en-Nŭkrah*, has a gentle undulating surface, with a strong slope towards the west; is arable

[1] Thomson, Land and Book, II. p. 39. Burckhardt, Syria, pp. 271, 273. Seetzen, Reisen, I. p. 368.

[2] Thomson, Land and Book, II. p. 39.

[3] E. Smith in Biblical Researches, 1841, III. App., p. 150.

throughout, with the exception of occasional tracts of volcanic stones; and is, in general, very fertile. With the rest of Haurân, it is the granary of Damascus; nothing but grain is cultivated. Hardly a tree or shrub is anywhere to be seen. Scattered throughout the plain are low mounds of basalt, on which the villages are usually situated. Higher isolated conical Tells of the same character are not infrequent. The fertility of the region is owing to the nature of the soil; which, as in other volcanic countries, is composed of disintegrated lava, forming a reddish brown loam of great fertility. This soil, known as the Haurân loam, is celebrated throughout Syria.[1]

The *Lejah* is a singular district of volcanic rocks. It is of an oval form, about twenty-five miles long from north to south, by about fifteen miles broad. It is skirted on the east by Wady Liwa, a water-course from the mountain running north to the southernmost of the Damascus lakes. The tract immediately surrounding the Lejah and forming its border, is called by the Arabs *el-Luhf*, 'the coverings.' The outer Lejah is a level country, with a stony soil covered with heaps of rocks; among which are interspersed small patches of meadow. The inner Lejah is a labyrinth of rocks; through which the Arabs alone have the clew. Some of the rocks are twenty feet high; and the country is full of clefts and Wadys. Trees grow here in great numbers among the rocks; the oak and the Bŭtm being the most common. There are no springs in any part of this rocky district.

"In the interior parts of the Lejah the rocks are in many places cleft asunder, so that the whole hill appears shivered

[1] E. Smith in Biblical Researches, 1841, III. App., p. 150. Seetzen, Reisen, I. p. 132; comp. pp. 45, 47. Wetzstein, in Zeitschr. für allg. Erdk., 1859, Sept., pp. 147, 148. Lyell, Elements of Geology, p. 90.

and in the act of falling down. The layers are generally horizontal, from six to eight feet or more in thickness; sometimes covering the hills, and inclining to their curve, as appears from the fissures, which often traverse the rock from top to bottom." The rock is everywhere hard black basalt, filled with little pits and protuberances like air bubbles; and emits a sharp metallic sound when struck. It is much used for the millstones of the country. Only two conical Tells, like those in the great plain, are seen in the Lejah, rising to the height of three or four hundred feet, — Tell Amâra and Tell Sumeid. These physical features of the Lejah have rendered it a secure retreat for robbers and outlaws from the earliest times until the present day. The military prowess of Ibrahim Pasha was taxed in vain to subdue it.[1]

The mountain, Jebel Haurân, lies mainly east of the plain; and the great body of it is everywhere volcanic. Especially the high plateau, on which rise the loftiest summits, as the Kuleib and others, several of them with extinct craters, consists of a compact basalt with few traces of decomposition. Near the southern end, also, at Sŭlkhad, the hill on which the castle stands is composed of alternate layers of the common black tuff of the country, and of a very porous deep red pumice-stone. The soil is the reddish brown loam of the region, and very fertile.[2]

Eastward of the mountain and of the Lejah lies the desert; but it is a desert of the most extraordinary and frightful character, being wholly and strangely volcanic. The extent

[1] Burckhardt, Syria, pp. 110, 112, 113. Porter's Damascus, II. pp. 48, 240. Handbook, pp. 499, 504, 506. Wetzstein, in Zeitschr. für allg. Erdk., 1859, Sept., pp. 136, 137.

[2] Dörgens, in Zeitschr. für allg. Erdk., 1860, Dec., p. 408. Burckhardt, Syria, pp. 102, 105.

of this volcanic desert tract, so far as known, is perhaps one hundred miles or more in length from south to north, lying between Lat. 32° and 34° N. The breadth may be from sixty to seventy miles. The northern portion, situated east of the Damascus lakes, does not of course fall within the limits of Palestine proper.[1] The southern portion, on the east and southeast of the mountain, is known as el-Harrah. It is an undulating plain, thickly strewed with volcanic rocks and stones, so that it is difficult for animals to find their way. It can never be cultivated; yet in the rainy season herbage springs up among the stones, which affords pasturage for the flocks of the Bedawîn. In several places inscriptions are found upon these scattered blocks, some in known characters, and others in unknown.[2]

The middle point of this great volcanic district is the Safa, on the north and west of the Harrah. This is a tract fifteen or twenty miles long by as much in breadth, a mere plateau or mountain of lava, the surface exhibiting the most ragged and fantastic forms, upheaved, blistered, riven, corrugated, jagged, with many deep pits and rents, and impassable for man or beast. Various volcanic cones are seen in it, as also in the more northern portion of the district; the ancient sources of this flood of fire. Among these more northern cones are the Tellûl (including Tell Dŭkweh), which are seen from Damascus upon the eastern horizon.[3]

On the southeast of the Safa, between it and the Harrah, lies a depressed strip of fertile land, an oasis or plain, some five miles broad by seven or eight long, known as er-Ruhbeh.

[1] Wetzstein, in Zeitschr. für allg. Erdk., 1859, Sept., pp. 113, 114.

[2] Wetzstein, in Zeitschr. für allg. Erdk., 1859, Sept., pp. 126, 174.

[3] Wetzstein, in Zeitschr. für allg. Erdk., 1859, Sept., pp. 114–125. Later Biblical Researches, pp. 445, 446, 470.

Here the waters collect in the rainy season and form a lake in the northern part, which dries up in summer. This fine tract is inhabited by the Bedawîn.[1]

The two singular regions of volcanic rocks now described, the Lejah in the west and the Safa with the Harrah in the east, correspond very aptly, as suggested by Wetzstein, to *the two Trachones* (*οἱ δύο Τράχωνες*) of Strabo; which he places in the south or southeast of Damascus.[2] These have usually been regarded, on mere conjecture, as two mountains; because the easternmost of the two "rough" tracts had become utterly unknown to scholars. The Lejah, without doubt, was comprised in ancient Trachonitis; and gave name to the district.

Returning to the borders of the Ghôr, we find the igneous rocks terminating, as we have described, just south of the Hieromax; and thence the limestone running on south through all Jebel 'Ajlûn and the Belka. But along the northeastern coast of the Dead Sea, north of the Zerka Ma'în, there are blocks of basalt in great numbers, as also various kinds of lava and pumice-stone.[3] Near the southeastern extremity of the same sea, the narrow tract along the shore, according to Irby and Mangles, is strewn "with innumerable fragments of red and gray granite; gray, red, and black porphyry; serpentine stone; beautiful black basalt; breccia, etc."[4] These would seem to be fragments from the mountain above. Still further south, around Petra, as we know, the whole body of the mountain is porphyry; above which lies

[1] Wetzstein, in Zeitschr. für allg. Erdk., 1859, Sept., p. 138.

[2] Strabo, 17. 2. 16, 20, pp. 755, 756. Wetzstein, in Zeitschr. für allg. Erdk., 1859, Sept., p. 144.

[3] Seetzen, Reisen, II. p. 369. Anderson, Geological Report, pp. 194, 197.

[4] Irby and Mangles, 1847, p. 109.

the singular sandstone formation of that region; while further back are seen still higher hills of limestone.[1]

Besides the great volcanic tract in northeastern Palestine, above described, there exists another still more extensive in northern Syria. It includes the northern end of Lebanon and of the Bŭkâ'a, with the region of Hums and Hamah; extends to the sea near Tortosa, embracing most of the mountains of the Nŭsairîyeh; and, taking in Antioch and Aleppo in the north, reaches to the Euphrates or beyond.[2]

### IV. EARTHQUAKES.

Like other countries in which volcanic formations exist, Palestine is subject to earthquakes. So far, however, as they are recorded in history, they have been less frequent and less destructive in Palestine proper, than in the great volcanic region of northern Syria; where large cities, like Antioch, Aleppo, Ba'albek, and others, have been repeatedly overthrown by them.

In the sublime imagery with which the Hebrew poets surround the appearance of Jehovah in behalf of his people, the earthquake holds a prominent place: "Then the earth shook and trembled; the foundations of the hills moved and were shaken, because He was wroth.[3]

In Scripture only four earthquakes are definitely recorded. The first was in connection with the appearance of God to the prophet Elijah in mount Horeb; a miraculous accompaniment of the divine manifestation.[4] The second took

[1] Biblical Researches, II. pp. 123, 124, 128, 129 sq. [II. pp. 506, 507, 514 sq.].

[2] Later Biblical Researches, pp. 540, 542, 557–559. W. M. Thomson, in Bibliotheca Sacra, 1848, p. 472. See also *Appendix*.

[3] Ps. xviii. 7; comp. Ps. lxviii. 8; Nah. i. 5, 6; Hab. iii. 10.

[4] 1 Kings xix. 11, 12; comp. vs. 8.

place during the reign of King Uzziah, under whom Amos prophesied; and his prophecy was uttered "two years before the earthquake." The date of the latter was therefore about B. C. 785. It was apparently a great earthquake; for three hundred years later and after the exile, the prophet Zechariah refers to it as an epoch of terror and flight.[1] The record of the other two earthquakes is in the New Testament: they occurred one at the death, the other at the resurrection, of the Lord Jesus Christ. The former was the most violent and remarkable; the rocks were rent, throwing open rock-hewn sepulchres; and for six hours preceding it, darkness had covered the land, — a not unfrequent accompaniment of earthquakes.[2] The other, at the resurrection of our Lord, is mentioned only by Matthew.[3] But it obviously lay in the minds of the sacred writers, that both these convulsions of nature were miraculous attestations to the dignity and majesty of the Son of God.

Another violent earthquake in Judea is mentioned by Josephus, about the time of the battle of Actium, B. C. 31; about ten thousand persons are said to have been killed by the fall of houses; but the army encamped in tents received no damage.[4] Jerome relates, that in his childhood the city of Ar Moab (Areopolis) was overthrown by a great earthquake. The date is uncertain; since the birth of Jerome is variously assigned to A. D. 329, 331, and 340. The reference may perhaps be to the extensive earthquake of A. D. 342, by which several oriental cities were destroyed.[5] In

[1] Amos i. 1; Zech. xiv. 5.

[2] Matth. xxvii. 51, 54; comp. Mark xv. 38; Luke xxiii. 45. Matth. xxvii. 45; Mark xv. 33; Luke xxiii. 44; comp. Ps. xviii. 9, 11.

[3] Matth. xxviii. 2.

[4] Joseph. Antiq., 15. 5. 2.

[5] Hieron. in Is. xv. 1, *in mea infantia.* Reland, Palaestina, p. 578. Ritter, Erdkunde, XV. p. 1215.

A. D. 672, Gaza and Askalon, with the adjacent places as far as Ramleh, suffered from the shocks of an earthquake.[1]

Of the ten destructive earthquakes which desolated Antioch during the eight centuries ending with the sixth century of the Christian era, none are recorded in any connection with Palestine.[2]

The terrible earthquakes mentioned in history, as having devastated northern Syria during the middle ages and in more modern times, extended, some of them, into Palestine; and the shocks of many of them may not improbably have been felt there, though no special damage was caused by them. Thus the earthquake of A. D. 1170, which was so destructive to Antioch and Ba'albek, and various other cities, left Palestine unharmed.[3] That which occurred in May, A. D. 1202, described by Abdallatif, ravaged not only all Syria, but extended throughout Haurân and Galilee, causing the destruction of Bâniâs, 'Akka, and Nâbulus; while Jerusalem received very little damage.[4] So in A. D. 1759, the violent earthquake which overthrew several of the massive columns in Ba'albek, and caused the death of several thousand persons in the great valley el-Bŭkâ'a, appears hardly to have extended to Palestine.[5]

In the present century an earthquake occurred in 1834; which shook Jerusalem, injured the chapel of the Nativity at Bethlehem, and was followed by the appearance of asphaltum floating in the Dead Sea.[6] One of the most fearful

[1] Ritter, Erdkunde, XVI. pp. 64, 70.

[2] O. Müller, Antiq. Antioch, pp. 14-17. Ritter, Erdkunde, XVII. 2. p. 1156.

[3] Will. Tyr., 20. 19. Wilken, Geschichte der Kreuzzüge, III. 2. p. 134. Later Biblical Researches, p. 525.

[4] Abdallatif, Relation de l'Egypte, par de Sacy, pp. 414-418. Later Biblical Researches, p. 94.

[5] Volney, Voyage en Syrie, I. p. 276. Later Biblical Researches, p. 527.

[6] Biblical Researches, I. p. 518 [II. p. 229].

earthquakes ever known in Palestine took place Jan. 1, 1837; of which Safed would seem to have been the central point. That town was wholly destroyed, and about four thousand of the inhabitants perished. The walls of Tiberias and many houses were thrown down, and seven hundred of the inhabitants killed; several of the neighboring towns and villages were injured more or less, Nazareth among the rest; and the shocks were felt as far as Bethlehem and Hebron, where, however, no great damage was done. A very large mass of asphaltum was afterwards found floating in the Dead Sea.[1]

It appears that amid all the terrific earthquakes with which Syria has been afflicted for so many centuries, the city of Jerusalem has been comparatively spared; in consequence, perhaps, of its position and distance from the volcanic regions. The same holds true, also, of the city of Damascus.

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NOTE BY THE EDITOR.

The Author intended to complete this Chapter by some instructive remarks on *Caverns*, *Minerals*, and *Soils;* and to add two other Chapters *on the Vegetable* and *the Animal features* of the Holy Land. An operation on the eye interrupted him, and he never resumed this work afterwards.

In respect to the first subjects, the Works mentioned in the notes of this Geological Chapter, and principally the Author's own Works, may be referred to; in respect to the last, the Note at the end of the Appendix.

[1] Biblical Researches, II. p. 423 and note [III. pp. 322, 323, and note]. Ibid., II. p. 381 [III. p. 254]. Ritter, Erdkunde, XVI. pp. 210, 287, 749. Biblical Researches, I. p. 518 [II. p. 229].

# APPENDIX.

# NOTE BY THE EDITOR.

The following description of the Syrian Coast was the commencement of the author's large work on Biblical Geography after his first plan (see Preface). It was written before his second journey to the East, the results of which were his Later Biblical Researches in Palestine and the adjacent regions. There is no doubt that on resuming his work on Biblical Geography, upon a somewhat different plan, and beginning with Palestine as the very nucleus of the *Central Region*, the following pages, with additions and improvements from the author's hand, would have formed the second part of his work, and have followed immediately the description of Palestine. The editor, in producing this valuable fragment in its existing form, has been careful to add the necessary references to the Later Biblical Researches of the author, which are partially devoted to the Lebanon and the surrounding country.

Th. R.

# PHYSICAL GEOGRAPHY OF THE SYRIAN COAST,

EXTENDING FROM ASIA MINOR TO THE RED SEA.

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The general features of this region may be thus specified: A double range of parallel mountains, in part lofty, running longitudinally and with few interruptions throughout the whole extent; between these, for nearly the whole distance, a deep longitudinal valley or trough, in which rivers run in opposite directions, or spread out into lakes; the southern portion being partly a desert and partly occupied by the waters of the Red Sea; while along the outer bases of the mountains are narrow plains, skirted on one side by the Mediterranean, and on the other by the Arabian Desert. The mountains are a branch thrown off nearly at right angles towards the south, from the great chain of Mount Taurus in Asia Minor.

In the north, we have, first, Mount Amanus, a lofty spur of Taurus; which, after enclosing in its fork the northeastern corner of the Mediterranean or Bay of Issus, extends southward along the coast to the Orontes; where that river, turning westward from its former course, breaks through the mountains to the sea. Next comes the broad valley of the Orontes, with Mount Casius and its prolongations on the west, and other lesser ranges of mountains on the east. Then follows the more imposing valley of the Leontes, the modern

Bŭkâ'a, shut in by the towering ridges of Lebanon and Anti-Lebanon with Hermon; the various peaks of which rise to an elevation of nine or ten thousand feet. Here is the loftiest portion of the whole region.

To this succeeds the longer and lower valley of the Jordan with its three lakes; extending also beyond the Dead Sea, but without streams, quite to the Red Sea, where it forms the Gulf of 'Akabah. The mountains which enclose this latter valley are lower prolongations of Lebanon and Anti-Lebanon; sometimes spreading out into plateaus of table-land; and again rising into higher tracts, like Mount Gilead on the east, and the country around Hebron on the west. The western range, at its southern extremity, expands into the broken ridges and lofty groups of Sinai; some of which have an elevation of more than eight thousand feet.

The whole tract thus described lies between Lat. 27° 45′ N., and Lat. 36° 55′ N. It thus has a length of about *five hundred and fifty* geographical miles; while its average breadth, between the sea and the desert, is not more than about *seventy-five* miles. The northern and southern extremities of the coast are nearly in Long. 36° and 34° E. from Greenwich; so that the general direction of the region is not far from N. N. E. to S. S. W.

If we regard this long narrow region as divided into three parts by two parallels of latitude, — one drawn from near Tyre through the lower sources of the Jordan, and the other at a short distance south of the Dead Sea, — then the northern portion comprehends Syria Proper, including Phenicia; the middle portion embraces all the Holy Land, from Dan to Beersheba; and the southern portion takes in on the east Arabia Petræa (except Moab), and on the west the desert and peninsula of Mount Sinai. We follow this order.

# PHYSICAL GEOGRAPHY OF SYRIA PROPER,

INCLUDING ANCIENT PHENICIA.

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This country, as we have seen, forms the northern portion of the region of the Syrian coast, adjacent to Asia Minor, and is bounded on the south very nearly by a parallel of latitude drawn through the sources of the Jordan at Bâniâs. Its length is thus about two hundred and twenty miles. The breadth varies; being at Antioch about eighty miles, and at Damascus about sixty miles. Opposite to the northeast corner of the Mediterranean is the great western bend of the Euphrates, where that river approaches nearest to this sea. The interval between is about ninety miles.

## I. SURFACE: MOUNTAINS, VALLEYS, PLAINS.

The physical features of this land divide it naturally into *three* portions; namely, the tract north of the Orontes; the valley of the Orontes; and the valley of the Leontes.

The first or northern tract is about forty-five miles in length. Its main feature is the single range of *Mount Amanus;* the general elevation of which is given at five thousand to six thousand feet. Its southern part, towards the mouth of the Orontes, bore the name of *Mount Pierius;* throwing out a large promontory on the coast north of Seleucia. On

these mountains are extensive forests. Two celebrated passes break through the ridge of Amanus, called gates (*pylae*); namely, the Pylae of Amanus, so called, north of Issus; and the Pylae of Syria, south of Alexandria (Iskandarûn), at Beilân. This latter pass is the usual road between Antioch and Alexandria.[1] The plain along the coast is quite narrow. It is interrupted by the promontory from Mount Pierius; and also by spurs running down to the sea north of Alexandria. Here is another celebrated pass along the shore, called the Pylae of Syria-Cilicia.

Adjacent to Mount Amanus on the east is a low district or valley drained by the Kara Su (Black water); beyond which the country is hilly, but not unfertile, as far as to the hollow of the ancient Chalus, the stream on which Aleppo is situated. This tract has a medium elevation of five hundred to six hundred feet above the sea. Beyond the Chalus the country is undulating and tolerably fertile quite to the Euphrates; with a medium height above the sea of about twelve hundred feet. The level of the Euphrates at Bîr, is six hundred and twenty-eight feet above the Mediterranean.[2]

The second or middle tract extends from Antioch to the plain north of Lebanon, about eighty-five miles in length. South of the Orontes, on the coast, *Mount Casius* forms a lofty promontory. The elevation of its pyramidal summit is given at five thousand three hundred and forty-one feet;[3] it is now called Jebel Akra. Its lower ridges stretch towards the east along the lower valley of the Orontes; and connect with

[1] Chesney in Journal of the Royal Geographical Society, 1837, pp. 414, 415. Pococke, II. pp. 174, 175. Niebuhr, Reiseb. III. p. 18. Kiepert's Map of Asia Minor, 1846.

[2] Chesney in Jour. of the R. Geogr. Soc., 1837, pp. 416, 419. Ritter, X. pp. 954, 1029.

[3] Ainsworth's Researches in Assyria, etc., p. 305.

another southern range, perhaps the Anti-Casius of antiquity. This latter extends southward in various ridges and with many defiles quite to the plain by Lebanon; where its ridges terminate in steep wooded hills. One of these is now surmounted by the imposing fortress el-Husn, formerly known as Husn el-Akrâd, or castle of the Kûrds.[1] The ancient name of this mountainous chain is lost; except perhaps at the southern end, where it seems to correspond to the *Mons Bargylus* of Pliny.[2] It is now called Jebel en Nŭsairîyeh, from the people of that name who inhabit it, an heretical sect of Muhammedan origin.[3]

This range, especially in the northern part, is richly wooded with pine, oak, and various other kinds of trees. The main body of the mountains is chalky limestone with flint. In the southern parts there is much trap rock; and towards the north and around Mount Casius there is also found serpentine, talc, and sandstone.[4] Eastward of this chain, and parallel to it, is another irregular range of mountains, extending from near the bend of the Orontes to some distance south of Hamah;[5] the ancient name of which is also lost. The northern part is now called Jebel Rîha from a village upon it; further south it takes various local names.

Between these two ranges stretches the noble valley or plain of the Orontes, now called el-Ghâb. Its breadth is about five miles in the southern part, but lessens towards the north. The river flows near the foot of the western mountains, where it forms numerous marshes. Burckhardt

[1] Abulfeda, Tab. Syr., p. 102. Burckhardt, Syria, p. 158.

[2] Pliny, Hist. Nat., 5. 17. Pococke, II. p. 204.

[3] Later Biblical Researches, pp. 390, 557.

[4] Irby and Mangles, p. 224 sq. W. M. Thomson in Missionary Herald, 1841, p. 234. Russegger, I. p. 448.

[5] Burckhardt, Syria, p. 148.

speaks of this as a beautiful valley, which he could compare only to the Bŭkâ'a between the two Lebanons; but the Ghâb has the great advantage of being abundantly watered.[1] In the parallel of Antioch the mountains disappear; and a vast plain opens towards the east and north; while the valley with the river, sweeping around the northern end of the western chain, continues towards the southwest quite to the sea. Below Antioch the valley contracts and is skirted by precipices; but it again opens towards the sea into a broad plain. The scenery of this portion of the valley is described as romantic and very beautiful.[2]

The narrow plain along the coast begins on the south of Mount Casius, not far north of Laodicea, and reaches to Tripoli. Towards the southern end of the mountains of the Nŭsairîyeh and north of Lebanon, it becomes broad and extensive, and is known as the plain of 'Akkâr (Jûn 'Akkâr), or simply Junia. From it there extends up towards the southeast, between the northern mountains and Lebanon, an arm of some width; which is described as connecting beyond the mountains with the northern part of the great valley of the Bŭkâ'a. This latter here spreads out on the north of Lebanon and Anti-Lebanon into rich plains towards Hums and Hamah, forming a boundless tract of level country, which gradually loses itself in the eastern desert.[3] The region stretching from Aleppo towards the south, is mostly an undulating and sometimes rugged desert, now inhabited

[1] Burckhardt, Syria, pp. 134, 136.

[2] Irby and Mangles, p. 225. Russegger, I. p. 363. See the author's description of this valley after he had seen it himself, Later Biblical Researches, p. 548 sq.

[3] Biblical Researches, III., first edition, App., p. 181. Burckhardt, Syria, p. 160. Pococke, II. p. 204. Buckingham, Arab Tr., pp. 495, 503. O. v. Richter, p. 203.

by nomadic Arabs; but affording frequent traces of ancient towns and villages.

Of all the mountains and valleys thus far described, none are mentioned in Scripture. But in the third or southern tract, which includes the district of Lebanon, we tread on Scripture ground. It extends from the plain just described on the north of Lebanon to the sources of the Jordan at Bâniâs, a distance of about ninety miles. Within these limits lie the two great ranges of Lebanon and Anti-Lebanon, so prominent in Scripture, rising up from the plain on the north, and running nearly parallel to each other through their whole extent. The two ranges, however, have each a distinct and different character. The former has its highest summits in the north, and gradually declines towards the south; the latter is lower in the north, but terminates in the south in the towering peaks of Hermon.[1]

The range of LEBANON rises from the north, at first gradually, and then more boldly, into a lofty central ridge, mostly barren, which forms (so to speak) the spine of the whole mountain. From this high ridge, the eastern declivity, towards the Bŭkâ'a, is steep, with few streams, and mostly without tillage or inhabitants.[2] The western declivity, on the contrary, is longer and more gradual; forming indeed below the main ridge an elevated slope of hills, deep valleys, and open tracts, mostly fit for cultivation, watered by many streams, and at the present day teeming with the frequent villages of a thrifty population. Next the sea this lower region sinks down more steeply; so that, to one looking up from below, the whole mountain side appears as if composed

[1] Later Biblical Researches, pp. 48, 50.

[2] Biblical Researches, III., first edition, App., p. 140. See a description of the eastern declivity in Later Biblical Researches, pp. 421, 530, 546–548.

only of immense rugged masses of naked, whitish rock, severed by deep wild ravines running down precipitously to the plain. This whitish appearance of the mountain as the light is reflected from its rocky surface, sufficiently accounts for the ancient name "Lebanon," signifying in Hebrew the "White Mountain." The name was not derived from its snows; for, in summer, snow is found only in high sheltered places not visible from below; so that the summits are not whitened by it. The mountain still bears among the Arabs the general name of Jebel Libnân; while its various parts are known among the inhabitants by different local appellations.

The loftier summits of Lebanon rise along the high central ridge; which, in the intervals, presents not very uneven tracts of table-land, covered with a scanty pasturage. The northern portion of the mountain is now called Jebel 'Akkâr. The northernmost peak rises southeast of Tripoli, and is known on the coast as Jebel Mŭkhmal.[1] Its elevation is given at eight thousand four hundred Paris feet.[2] Then follows, after a long interval, Jebel Sŭnnîn, north of east from Beirût, generally regarded as the highest point of Lebanon. The usual estimate of its elevation is from nine thousand to ten thousand feet. In the ravines around both these summits, snow is found during the whole summer; and from Sŭnnîn it is carried away on mules to supply Beirût with a luxury. A few miles further south is Jebel Keneisch, a lower summit, just north of the pass el-Mughîtbeh on the road from Beirût to Damascus.[3]

From this point southward the highest part of the moun-

[1] E. Smith, Ms. Later Biblical Researches, p. 593 sq.

[2] Russegger, I. p. 717.

[3] Later Biblical Researches: "The first, el-Kenîseh is marked by Petermann at 7245 feet. Sŭnnîn, according to Marshal Marmont, is about 8300 English feet.

tain forms again a single uniform ridge nearly to Jezzîn, where it becomes broader, and is broken up into irregular peaks and ridges. In this part it bears different local names. Opposite to Kefr Hûneh it takes the name of Jebel Rîhân, from a village further south; and the ridge, as such, finally terminates at the river Lîtâny, where it flows in a western course between the bridges of Bŭrghŭz and Khŭrdela. The whole southern part of Lebanon is sometimes also called Jebel ed-Derûz, Mountain of the Druzes, as being the chief residence of that singular people.

On the western Lebanon, below the central ridge, the larger streams are generally formed by several tributaries, coming from deep valleys or ravines. Indeed, the valleys of all this region have in general a uniform character. Except at their heads, where they are shallow and sometimes form basins of fertile land, they are mostly of great depth; their sides rising up as mountains, and being marked by regular features. From the bottom there is first an acclivity; then, usually about halfway up, there is a precipice; and above this precipice the ascent becomes more gradual. Along it villages are built (as also below the precipice), and it connects itself without interruption with the arable land above. In the northern part of the mountain, the course of these valleys to the sea is northwest. In the middle part, north of the Damascus road, they descend towards the west and southwest. South of that road they run first south, and then west, to the sea. Thus the valley of the Awaly, the ancient Bostrenus, begins near the Damascus road, and takes its

One summit above the cedars, Fum el-Mîzâb, was found by Dr. De Forest in 1853 to be 9135 feet high. Another adjacent peak, Dahar el-Khŭdîb, was estimated by him as at least 175 feet higher; in all 9310 feet. This is the highest point of Lebanon." p. 547; see also pp. 15, 489, 494.—Ed.

course south to the vicinity of Jezzîn; separating the western tract of the mountain from the high ridge, and forming thus two parallel ranges. Then, turning west almost at a right angle, it breaks its way as a deep alluvial valley down to the sea near Sidon. The higher portion of western Lebanon may be said to terminate here; its prolongation on the south of the Awaly being lower and constituting the broad tract of table-land which extends beyond Tyre, and goes to form the hills of Galilee.[1]

The rock of which Lebanon is composed is the Jura limestone, with petrifactions of muscles and fish to the height of three thousand feet.[2] East of Beirût, high up on the side of the mountain, near Kŭrnâyil, are mines of coal; and still higher, some of iron; but none of these have yet been wrought to advantage.[3] Notwithstanding the naked appearance of Lebanon at a distance, it everywhere abounds in fertile soil, and the products of the vegetable kingdom are numerous and abundant. In the higher parts are tracts of pines, which furnish timber for the neighboring countries; nor have the cedars, the ancient glory of Lebanon, by any means disappeared. A grove of several hundred cedars near Ehden in the highest region of the mountain, many of them venerable for their great age and size, was long supposed to

[1] In this description of Lebanon the main features are derived from a manuscript journal of Rev. E. Smith, who resided for years on the mountain, and traversed every part of it. Comp. Burckhardt, Syria, p. 19. [A few years after writing this, the author had occasion to convince himself, by personal investigation, of the correctness of this description, and to add the results of his own examination of the locality. See Later Biblical Researches, pp. 14, 36, 37, 42, 530, 547 sq., 624 sq.—Ed.]

[2] Humboldt on Ehrenberg and Hampricht's Journeys in Abhandlungen der Berl. Acad., 1846, p. 131. Burckhardt, p. 19. See also Cedrenus and Glycus, quoted by Reland, Palaestina, p. 321.

[3] Russegger, I. p. 779 sq., 788 sq. Bowring's Report on Syria, p. 20.

be the only remnant of this noble tree upon its native soil. Later travellers, however, have found the cedar growing abundantly on the more northern parts of Lebanon; though none so large and venerable.[1] In that particular grove there are about a dozen patriarchal trees, formed each by the union of three or four trunks, and remarkable for their age and immense size. Around these have shot up about three hundred single trees, some of them quite large, and many that would be admired in any place for their beauty. Their straight stem and spreading branches, and the graceful symmetry of the whole, fairly entitle them to be regarded as "the glory of Lebanon." The cones, beautifully pendant from the bottom of the branches, exude a kind of balsam, highly fragrant, which fully explains the poetical allusion to "the smell of Lebanon." [2]

The oak, walnut, plane, silver poplar, acacia, and various other trees are not infrequent. The olive and the mulberry are widely cultivated; the one for its oil, and the other as food for silkworms. The wine of Lebanon was celebrated of old.[3] At present extensive vineyards surround many of the villages, the vines being left to run upon the ground. The fruit is mostly eaten, or is converted into raisins and *dibs* (sirup); a small part only is made into wine, which is still accounted of superior excellence.[4] Not a little of the soil is arable, and is used for crops, chiefly of wheat, maize,

[1] Biblical Researches, II. p. 493 [III. p. 440]. Later Biblical Researches, pp. 588–593.

[2] S. Wolcott in Bibliotheca Sacra, 1843, p. 86. Is. lx. 13; Cant. iv. 11. [See a full description of the cedars of Lebanon in Later Biblical Researches, pp. 588–593.—Ed.]

[3] Hosea xiv. 7.

[4] E. Smith on the Wines of Lebanon, Bibliotheca Sacra, 1846, p. 385 sq. Bowring's Report on Syria, p. 17.

and tobacco.[1] Where the acclivities are too steep for ordinary tillage, terraces are built up along them with great labor and covered with soil. Indeed, the whole surface of the mountain bears marks of patient industry and thrift, indicating a numerous population of hardy, laborious, independent mountaineers.

The ancient renown of Lebanon for beauty and fertility extended beyond Palestine. Moses prayed: "Let me go over and see the good land that is beyond Jordan, that goodly mountain, even Lebanon."[2] It is mentioned by name in Scripture no less than sixty-eight times; at first as lying on the northern border of the Promised Land;[3] and then often for its cedars. The wood of these was used in building both the first and second temple;[4] as also for Solomon's palace and its furniture.[5] To the Hebrew poet the stately cedar of Lebanon was an emblem of the good man flourishing in the favor of God; sometimes also of the prosperous wicked; and again of the glory of idolatrous Assyria.[6] More frequently it was an image of grace and beauty.[7] The fragrance of the forests and flowers of Lebanon was also an object of poetic comparison.[8]

The name Lebanon in Scripture is sometimes supposed to have comprehended also the eastern mountain; and in five instances where the Hebrew has Lebanon, the Septuagint reads Anti-Lebanon.[9] But this view would seem not well founded. The southern part of Anti-Lebanon is always known in Scripture as Mount Hermon; and as to the north-

[1] Bowring's Report on Syria, pp. 8, 18.

[2] Deut. iii. 25.

[3] Deut. i. 7, xi. 24. Josh. i. 4, xiii. 6.

[4] 1 Kings v. 6, ix. 14; Ezra iii. 7.

[5] 1 Kings vii. 2, x. 21; Cant. iii. 9.

[6] Ps. xcii. 12, Ps. xxix. 5; Is. ii. 12, 13; Ezek. xxxi. 3 sq.

[7] Judg. ix. 15; 2 Kings xiv. 9, xix. 23; comp. Is. xiv. 8, xxxvii. 24.

[8] Hosea xiv. 6; Cant. iv. 11.

[9] Deut. i. 7, iii. 25, xi. 24; Josh i. 4, ix. 1.

ern part, if mentioned at all, it is probably under the name of Senir.[1] The Mount Hor spoken of as a point in the northern border of the Israelites, would seem to have been either the northern end of Lebanon Proper, or a spur connected with it.[2]

The main ridge of *Anti-Lebanon* begins also from the north, over against the northern end of Lebanon, some fifteen miles south of Hums, and north of Hasya on the road to Damascus; where the eastern plain extends around it quite to the Orontes.[3] Like Lebanon, it is composed of Jura limestone. It may be regarded as made up of two parts, lying north and south of the parallel of Damascus; or rather as divided at a point somewhat north of that parallel. The northern part now bears the name of Jebel esh-Shŭrky, or East Mountain. It is a long and not uneven ridge, less lofty than Lebanon; and in contrast to that mountain, having its steepest declivity on the west towards the Bŭkâ'a, almost without streams or villages. The top of the ridge forms in some places a broad tract of uneven table-land. The eastern declivity is quite gradual; or rather this eastern side is characterized by successive lower ridges with intervening open tracts, or terraces, running parallel with its course, and presenting towards the east steep declivities and sometimes perpendicular precipices. The river Barada, which, rising high up in the mountain, flows by Damascus, the only important stream of Anti-Lebanon, breaks through no less than three such ridges. The surface of this portion of the mountain north of the Barada, is naked and barren; and several spurs from the mountain, or rather from the parallel

[1] 1 Chr. v. 23; Cant. iv. 8. [2] Num. xxiv. 7, 8.

[3] Biblical Researches, III., first edition, App., p. 171. Irby and Mangles, p 281. Buckingham, Arab Tr., p. 488.

ridges, having the same general character, extend into the desert in the direction of Palmyra; forming the rugged and broken country crossed by the caravan road from Damascus to Hums.[1]

The southern portion of Anti-Lebanon slightly trends still further towards the southwest; and rises south of Rasheiya into the lofty peaks of Jebel esh-Sheikh, the Mount Hermon of Scripture, the highest of all the Syrian mountains, estimated at more than ten thousand feet above the sea. It is sometimes called also Jebel et-Telj, or Snowy Mountain.[2] Both its eastern and western sides are steep and uninhabited. In the ravines around the higher of the two peaks, snow or rather ice lies during the whole year; and hence in summer the mountain presents at a distance the appearance of radiant stripes descending from its crown. In the fourth century the snows of Hermon were carried to Tyre in summer as a luxury.[3] The ridge afterwards slopes off gradually and irregularly towards the W. S. W., quite down to the mouth of Wady et-Teim, northwest of Bâniâs. From the southeastern base of the highest part of Jebel esh-Sheikh, a low broad spur or mountainous tract, called Jebel Heish, runs off towards the south, and forms a prolongation of Anti-Lebanon, in the high land which shuts in on the east the basin of the Hûleh and the valley of the Jordan.[4]

Mount Hermon, although its majestic form is visible from the greater part of northern Palestine, is mentioned in Scripture only twelve times; and then chiefly as marking a

[1] Biblical Researches, III., first edition, Appendix, p. 171.

[2] Abulfeda, Tab. Syr., p. 163.

[3] Jerome, Onomast., article *Ærmon*.

[4] For a short descriptive sketch of the two mountains Lebanon and Anti-Lebanon, see Later Biblical Researches, pp. 546, 547. — Ed.

boundary. There are but three poetical allusions to it;[1] for as contrasted with Lebanon, it is steep and rugged, without fertility, or cedars, or flowers; and had, therefore, far less of poetic charm. On account of its two summits, it is once spoken of in the plural, as *the Hermons*.[2] By the Sidonians it was called *Shirion;* and by the half-nomadic Amorites, *Senir*.[3] But Hermon and Senir are also sometimes distinguished.[4] The latter was probably the specific name of another portion of Anti-Lebanon, occasionally applied to the whole. In the fourteenth century the name *Senir*, handed down perhaps by tradition from the tribes of the desert, was current among the Arabs for the ridge of Anti-Lebanon north of Damascus.[5] Once Hermon is said to be the same as Mount *Sion;* which latter may here be nothing more than an epithet, signifying "the lofty."[6] The name *Amana* is likewise mentioned along with Senir and Hermon;[7] it was probably applied to the middle portion of Anti-Lebanon around the sources of the river Barada, the ancient Amana. Mount Baal-Hermon would seem to have been nothing more than that part of Hermon which was adjacent to the city Baal-Hermon.[8]

Between the mighty ranges of Lebanon and Anti-Lebanon, thus presenting their steepest walls over against each other, lies the *Bŭkâ'a*, the valley or plain watered by the ancient Leontes, now called the Lîtâny. It is the proper *Coele-Syria* of the ancients.[9] The general breadth of the valley is from

[1] Ps. lxxxix. 12, cxxxiii. 3; Cant. iv. 8.
[2] Ps. xlii. 6.
[3] Deut. iii. 9.
[4] 1 Chron. v. 23; Cant. iv. 8.
[5] Abulfeda, Tab. Syr., p. 164.
[6] Deut. iv. 48.
[7] Cant. iv. 8.
[8] Judg. iii. 3; comp. 1 Chron. v. 23. Later Biblical Researches, pp. 409, 410.
[9] Later Biblical Researches, p. 546.

four to six miles ;[1] the steep sides of the mountains on either hand rising to an elevation of five thousand to six thousand feet. The Bŭkâ'a is irrigated by several streams, though not profusely watered. In it is a watershed a few miles north of Ba'albek, marked by low hills ; south of which the streams all flow to the Lîtâny ; while just north are the sources of the Orontes, which send their waters northward to Antioch. The elevation of the valley at Ba'albek is given at three thousand four hundred and ninety-six Paris feet.[2]

From the point on the western side where Jebel esh-Sheikh begins, and the ridge trends more westerly, a low spur is thrown off towards the southwest ; which, being prolonged as a broad ridge of arable land diverging more and more from the eastern mountain, runs obliquely along the Bŭkâ'a as if to join itself to the southern end of Lebanon near Bŭrghŭz. By this low ridge the southern portion of the great valley is gradually narrowed to a point ; from which the Lîtâny forces its way through the continuation of Lebanon by a deep and very narrow chasm, foaming and dashing over rocks for miles between high precipices, until it issues upon the plain and joins the sea north of Tyre.

On the eastern side of the same arable ridge, as it diverges from Jebel esh-Sheikh, is formed the higher valley, or rather hilly tract, now known as *Wady et-Teim*. Its head is north of Muhaiditheh, where it has an open connection by a low watershed with the Bŭkă'a, near 'Ain Fâlûj. At this point its elevation is five hundred to six hundred feet above the Lîtâny.[3] At its southern extremity this valley becomes narrow, and enters the plain of Bâniâs at the northwest corner. In

[1] Schubert, III. p. 322.

[2] Russegger, I. p. 702. Schubert has 3572 Paris feet; III. p. 322.

[3] E. Smith, Ms. Journal.

this valley, near Hâsbeiya, is the remotest perennial source of the Jordan; which thus flows for a short distance parallel with the Lîtâny, though on a higher level. Not improbably this may be the particular "valley of Lebanon under Mount Hermon," spoken of in Scripture.[1]

On the seacoast, the Junia or plain, as we have seen, terminates at Tripoli, which lies upon a low triangular point extending into the sea, with many small islands beyond. Thence southwards the shore hugs the skirts of Lebanon as far as to Beirût. In one part a high promontory, the ancient Theuprosopon, now called Râs esh-Shŭka, cuts off all passage along the sea; and nowhere is there more than a narrow strip of level land. The low triangular headland of Beirût projects several miles into the sea; and is for the most part level or slightly undulating, with ranges of sandhills along its southwestern side. Beyond this there is another narrow and irregular level strip of coast; until towards Sidon the skirts of the mountain again reach down to the sea. South of the Awaly and back of Sidon, the mountains for a few miles recede and leave a broader amphitheatre; but they soon return towards the shore, and confine the plain to narrow limits, until it expands again back of Tyre, and then terminates a few miles beyond in the White Promontory, now called Râs el-Abyad. This is the celebrated Phenician plain between Tyre and Sidon, so often spoken of in Scripture and in profane writers. Its breadth is unequal; but is seldom greater than a mile, except around the two cities. The surface is not a dead level, but gently undulating.

East of the mountains, the region south of the rich plains of Hums, as far as to Damascus, is intersected, as we have

[1] Josh. xi. 17; comp. xiii. 5. A circumstantial description of the Bŭkâ'a and Wady et-Teim in Later Biblical Researches, pp. 492–504.

seen, by barren ridges thrown off towards the northeast from the parallel ledges connected with Anti-Lebanon. These impart to the country a rough and rugged, not to say mountainous character, with occasions valleys and plains of moderate extent.[1] South of this region is spread out the broad and beautiful plain of Damascus, watered by the Barada, and presenting to the eye of the traveller one of the most celebrated prospects of the oriental world. Its modern name is el-Ghûtah; and Abulfeda describes it as the noblest of the four Paradises, "which are the most excellent of the beautiful places of the earth."[2] The medium elevation of this plain is said to be two thousand three hundred Paris feet.[3]

## II. WATERS: RIVERS, LAKES, FOUNTAINS.

The coast of Syria has very few bays, and no good harbors; most of the maritime towns having only open roadsteads. In the north, the bay of Issus, now the gulf of Iskanderûn, forms the northeast corner of the Mediterranean. The bay of Jûneh or Kesrawân north of Beirût, affords an exposed anchorage for vessels.

East of Mount Amanus the Kara Su (in Arabic el-Aswad) flows S. S. W. and expands into the lake of Antioch, a few miles distant from the Orontes. The Nahr 'Afrîn, a longer stream enters the same lake from the northeast. This sheet of water is of an oval form, nearly forty miles in circuit; not deep, but well supplied with fish; and is a great resort of water-fowl. The level of the lake is three hundred

[1] Biblical Researches, III., first edition, App., p. 171. Pococke, II. p. 138 sq. Irby and Mangles, p. 281. O. v. Richter, p. 195 sq.

[2] Abulfeda, Tab. Syr., p. 100.

[3] Russegger, I. p. 415; comp. Schubert, III. p. 283. Later Biblical Researches, pp. 442–468.

and sixty-five feet above the sea. It is called Ak Denis, or also el-Yugara. The outlet, likewise known as the Kara Su, is on the west side, and enters the Orontes three miles above Antioch.[1]

The river of Aleppo, el-Kuweik, is the ancient *Chalus* of Xenophon, celebrated for its fish; and having even now three varieties unknown in the rivers of Europe, and considered of remarkable delicacy.[2] It rises near a branch of the Sajûr, a tributary of the Euphrates; and has a southerly course of about sixty miles. It flows by Aleppo as a small sluggish stream, eight or ten yards wide; its waters being drawn off for irrigation. Near the site of the ancient Colchis, it turns east, and loses itself in a marsh four miles from that place and some fifteen miles south of Aleppo.[3]

The longest and largest river of Syria is the *Orontes*, now called el-'Âsy, flowing towards the north; while all the other large streams have a southern direction. Its remotest source is near Lebweh, a village ten or twelve miles north of Ba'albek, at the foot of Anti-Lebanon. A little stream here comes down from the mountain; which wanders northward through the plain for twelve or fifteen miles, and then approaches the western side of the valley, along the low hills which skirt the base of Lebanon near the village el-Hŭrmul. At this place is a large fountain, which is commonly regarded as the head of the Orontes; the natives here, as in the case of the Lîtâny and the Jordan, considering not the

[1] W. M. Thomson in Missionary Herald, 1841, p. 238. Ainsworth, Researches in Assyria, p. 299. Chesney in Journal of Royal Geographical Society, 1838, p. 416. Abulfeda, Tab. Syr., p. 160.

[2] Xenophon, Anabasis, 1. 4. 9. W. B. Barker in Bowring's Report, p. 112.

[3] Russell's Aleppo, 1794, I. p. 3 sq. Pococke, II., p. 151. Abulfeda, Tab. Syr., p. 190. E. R. Beadle in Missionary Herald, 1842, p. 233.

most distant, but the most copious fountain as the proper source. A large volume of water "springs with some violence from a natural basin in the rock, of a triangular form, measuring about fifty paces, and nearly concealed on each side by trees and bushes." The Lebweh flows along the base of this triangle, and mingles its little current with the stream from the spring.[1] On the south side of the basin, at the top of the rock, there is an excavation of several rooms, said to have been the hermitage of Mârôn, the first Maronite. Hence the spot in Abulfeda's time bore the name of Mŭghârat er-Râhib (the Monk's cave), and is now known as Deir Mâr Mârôn.[2]

The stream pursues a northeasterly course by Ribleh through the great plain towards Hums, receiving several smaller tributaries. About ten miles south of that city, it expands into a lake some five miles long by two broad, formerly called el-Kady[3], and now known as the lake el-'Âsy or of Hums. The river passes on the west of Hums, less than a mile distant; and is there narrow, deep, and rapid. Between Hums and Hamah it makes a bend towards the right around an isolated mountain. At Hamah the river runs in a narrow valley lower than the plain; and here and below, as far as Shŭgr,[4] the water is raised by large Persian wheels, turned by the force of the current, for the use of the inhabitants and for irrigation. About ten miles below Hamah the Orontes breaks through a range of hills by a narrow channel with precipitous rocky banks, near the bridge and castle

[1] Later Biblical Researches, pp. 538, 539.

[2] W. B. Barker, in Journal of the Royal Geographical Society, 1837, pp. 99, 100. Abulfeda, Tab. Syr., p. 150. Biblical Researches, III., first edition, App. p. 144, 145. See a description of this cave in Later Biblical Researches, p. 589.

[3] Abulfeda, Tab. Syr., pp. 151, 157.

[4] Maundrell, p. 5.

Seijâr. Here are found remains of antiquity, which mark the place as an ancient site, probably Larissa.[1]

At this point the proper *valley* of the Orontes, el-Ghâb, may be said to begin. Many large fountains along each side of the Ghâb send their waters to augment the river; forming in several instances small lakes in the bottom of the valley. One of these, called et-Tâkeh, just northwest of the site of the ancient Apamea, is celebrated for its fish.[2] The river flows near the west side of the valley, where it forms numerous marshes; in the rainy season it overflows and connects with the lake.[3] At Shŭgr the stream is divided into a number of smaller channels. It runs here rapidly over a gravelly bottom; and for a mile above the bridge has less than three feet of water, while below the bridge it is deep.[4]

Just where the Orontes turns west towards Antioch, is the Jisr el-Hadîd, or Iron bridge, so called for centuries, on the great road to Aleppo.[5] Below Antioch, through the narrow portion of the valley, the river roars over a succession of rapids and shallows, which render it unnavigable even for steam vessels.[6] Where the plain again opens towards the sea, the stream is in some places fordable, but is usually crossed by a ferry. It is here about eight rods in width, with a very rapid current and muddy water, exhibiting a bluish-white appearance.[7]

The direct course of the Orontes from its source to the Jisr el-Hadîd, is nearest one hundred and twenty-eight

[1] Burckhardt, Syria, p. 145. Cellarius, II. p. 356.

[2] Burckhardt, Syria, p. 137. Comp. Abulfeda, Tab. Syr., pp. 151, 157.

[3] Abulfeda, Tab. Syr., pp. 157, 158. G. Robinson, II. p. 247.

[4] Monro, II., p. 211. Later Biblical Researches, p. 548 sq.

[5] Abulfeda, Tab. Syr., p. 151.

[6] Irby and Mangles, p. 226. Bowring's Report, p. 49.

[7] W. M. Thomson in Missionary Herald, 1841, p. 235.

miles; and from thence to the sea, about twenty-four miles. The level of the river at the Iron bridge is about the same as that of the adjacent lake, or three hundred and sixty-five feet above the sea. This gives an average fall of nearest fifteen feet for every mile of its lower southwestern course, where it is known to be most rapid. The source at Lebweh cannot be lower than Ba'albek; which is given at three thousand four hundred and ninety-six Paris, or three thousand seven hundred and thirty English feet, above the sea; or three thousand three hundred and sixty-five feet above the lake of Antioch. This again gives for the northern course of the river a fall of more than twenty-six feet for every mile, or nearly double the rate below the bend. This result seems incompatible with the apparently greater rapidity of the river in its lower part; and also with the general features of the country, and the marshes along the valley. Perhaps there may be some error in the barometical measurements of the Bŭkâ'a.

The Leontes, now called el-Lîtâny,[1] is the river of the Bŭkâ'a, and gathers its waters from the many fountains of the valley. In journeying from Zahleh at the foot of Lebanon to Ba'albek, one does not yet find the Lîtâny; only a few small streams, its tributaries, are crossed in the plain; the easternmost of which is followed to its source in a copious fountain a few miles south of Ba'albek.[2] This is perhaps the remotest perennial source. But the district is everywhere watered by rivulets; almost every village has its spring, all of which flow into the valley, where most of them are lost before reaching the Lîtâny, unless it be in the rainy season. Thus at Ba'albek there is a noble fountain, the stream from

[1] For the probable identity, see Biblical Researches, II. pp. 472, 473 [III. p. 410].

[2] Biblical Researches, III., first edition, App., p. 143.

which would naturally form one of the sources of the Lîtâny; yet in summer, at least, it loses itself in the plain. The case is the same with the still remoter fountain of Nahleh, three or four miles northeast of Ba'albek. At Zahleh, situated in the opening of a valley at the foot of Lebanon, a fine brook called el-Bŭrdôny issues from the mountain, and runs into the plain to join the main stream. So too just below on the other side, there comes in a rivulet from Anti-Lebanon, known as el-Kana, from the village of that name.[1] But the most copious stream of all comes from the fountains of 'Anjar, at the foot of Anti-Lebanon, southeast of Zahleh. Hence, as in the case of the Orontes, this spot is regarded by the natives as the true source of the Lîtâny. There are here several springs at the base of the mountains, about a mile distant from the village. The stream which issues from them flows sluggishly into the plain, and is not fordable. When Burckhardt saw it, the volume of water was triple that of the other branch of the Lîtâny. In summer the largest spring intermits its flow at certain periods eight or ten times in a day. Towards the north along the base of the mountain are two other large springs a mile distant; and a third, a mile or two further on; all of which send their waters to the river of 'Anjar, and are reckoned among its sources.[2]

After the junction of the streams, the Lîtâny flows on through the valley, which contracts towards the south, and loses its alluvial character some distance above the village of Sŭhmur on the left bank of the stream. Below this point

[1] Biblical Researches, III., first edition, App., pp. 141, 143. Burckhardt, Syria, pp. 4, 10, 16, 17.

[2] Biblical Researches, III., first edition, App., p. 143. Burckhardt, Syria, pp. 9, 10. E. Smith, Ms. Journal.

the channel of the river becomes narrow, and grows continually deeper; being apparently worn into the rock by the action of the water. At Sŭhmur the stream runs rapidly between perpendicular precipices. About three miles further south, a high tract crosses from the eastern hill to the foot of Lebanon; through which the river breaks its way by a similar narrow gorge. The village Yŭhmur is situated on the top, just on the left bank of the stream. Here is the most majestic part of the wonderful chasm. Its precipices cannot well be less than a thousand feet in height; higher than at any other point. At the bottom, like a silvery ribbon, the current rushes from rapid to rapid, foaming among the rocks, and decked with the gay blossoms of the oleander along its margin. Just north of this spot there is near the bottom a natural bridge across the stream, called el-Kûweh. It has evidently been formed by the falling of masses of rock from above; which, spanning the stream, have in time become covered with earth and bushes. This bridge is crossed by a bridle-path.[1]

South of Yŭhmur for several miles the course of the river is through the midst of an undulating basin; but it everywhere preserves its precipitous, though here lower banks. There is usually no depression of the ground as one approaches the river; so that when the chasm is not directly in sight, the whole tract appears as one continuous surface. Towards the south the basin is terminated near the village of Bŭrghŭz by a hill projecting from the east towards the bold side of Lebanon, with which it would form a junction but for the Lîtâny. Here is another majestic chasm; though its walls are less lofty than at Yŭhmur. Just below the

[1] Later Biblical Researches, pp. 53, 385–387.

bridge of Bŭrghŭz the river turns by a sudden angle towards the southwest; and continues to flow by a tortuous channel between rocky precipices in that general direction, along the high southern end of Jebel Rîhân (Lebanon), as far as to the bridge of Khŭrdela. Here it again flows south by the great castle esh-Shŭkîf; below which it turns due west, and passes out between precipices of great sublimity into the more open country around Tibnîn.

This deep rocky gorge is in fact a rent or crevice through the southern skirts and spurs of Lebanon. So narrow is the rent, that only here and there is there room for a foot-path below along the stream; and the high perpendicular cliffs approach so near together that in some spots, as near Bŭrghŭz, the branches of trees from either side meet and interlock. The lofty precipice, on which is situated the castle esh-Shŭkîf, is exceedingly grand; the castle crowns its highest pinnacle, standing upon the very brink; so that a stone let fall from its battlements would almost drop into the stream below.[1]

After turning west below the castle, the Lîtâny has a course of twelve or fifteen miles, and falls into the sea a few miles north of Tyre, under the name el-Kâsimîyeh. The stream in its lower part is twenty or thirty feet in width and of considerable depth. It flows to the sea with many windings, through a broad low tract of meadow-land.[2]

The length of the Lîtâny on a direct course, from Ba'albek to the sea, is nearest fifty-five miles. From the termination of the alluvial part of the Bŭkâ'a to the point where

[1] The foregoing description is drawn mainly from the Ms. Journal of Rev. E. Smith. Comp. W. M. Thomson in Bibliotheca Sacra, 1846, p. 205. [See the author's own view of it, after having visited it in 1852, in Later Biblical Researches, pp. 385, 387, 421–423, 404.—Ed.]

[2] Biblical Researches, II. p. 472 sq. [III. p. 409 sq.].

the river issues from its mountain gorge above Tibnîn, is nearest twenty miles. If for this part of its course we assume an average fall of one hundred feet in a mile, or two thousand feet in all (which is a very large allowance), there yet remains of the elevation at Ba'albek (three thousand seven hundred and thirty English feet), no less than seventeen hundred and thirty feet to be distributed along the rest of the course; namely, thirty-five miles. This gives an average fall of nearly fifty feet in a mile, in a course mostly along alluvial valleys. This result, taken in connection with the similar one in the case of the Orontes, seems to imply an error in the assumed elevation of the Bŭkâ'a, as indicated by the barometer.

Thus far of the waters of the great Syrian valley which find their way, by the Orontes on the north and the Leontes on the south, through the mountains to the Mediterranean. Next, of the shorter streams along the western declivity towards the sea.

North of the Orontes there are no streams of importance along the coast. Between Mount Casius and Lebanon the plain is well watered by several rivers which take their rise in the mountains; and by numerous fountains along the coast. Ancient writers make no mention of any of these streams, except the river *Eleutherus;* which is twice named in the Apocrypha, and often by Josephus.[1] This river was obviously on the north of Lebanon; and is loosely specified, along with adjacent towns, as the northern boundary of Phenicia towards Syria.[2] According to Strabo and Pliny it was near the city Simyra, now perhaps Sŭmrah (or Semâr);[3]

[1] 1 Macc. xi. 7, xii. 30. Josephus, Antt. 15. 4. 1.; Bel. Jud., 1. 18. 5. etc.

[2] Strabo, 16. 2. 12, 16. Pliny, Hist. Nat., 5. 20. Cellarius, II. p. 374.

[3] Cellarius, II. p. 374. Shaw, Travels, p. 269.

and corresponds therefore to the present Nahr el-Kebîr, the largest river of the plain.[1] It rises in the trap mountains, northeast of the castle el-Hŭsn; gathers the waters of the northernmost parts of Lebanon, and of the southern end of the Nŭsarîyeh mountains; and passing down between the two (though nearest to Lebanon), forms in the rainy season a large and swollen torrent, which is sometimes impassable for weeks together.[2]

One of the northernmost tributaries of this river, called Nahr el-'Arûs, takes its rise from a copious intermitting fountain in the valley west of the castle el-Hŭsn, and not far from the Greek convent Mar Jirjis, which is situated half an hour northwest of the castle. This fountain, which is mentioned by Burckhardt as near the convent, has recently been identified by Mr. Thomson with the famous *Sabbatical river* of Josephus.[3] The historian speaks of that river as between Arka, which belonged to Agrippa's kingdom of Chalcis, and Raphanea. The former town still exists near the coast at the north end of Lebanon; and the site of the latter, as we shall elsewhere see, is found on the way from el-Hŭsn to Hamah. Josephus describes the stream as flowing only on the seventh day; its channel being dry during the intervening six days. Pliny, on the other hand, narrates, that it runs during six days, and is dry on the seventh.[4] These are doubtless merely different forms of a current popular report. At the present time the water ordinarily flows

[1] Later Biblical Researches, p. 576.

[2] Burckhardt, Syria, p. 161. Maundrell, p. 32. Later Biblical Researches, pp. 558-560, 575, 576, 582.

[3] W. M. Thomson in Silliman's Journal of Science, Nov. 1846, p. 305 sq. Burckhardt, Syria, p. 160. Josephus, Bel. Jud., 7. 5. 1. Later Biblical Researches, pp. 572, 574.

[4] Pliny, Hist. Nat., 31. 2.

every third day; though, according to the testimony of the monks of the adjacent convent, the interval varies with the alternations of the wet and dry seasons. Yet the inhabitants of the neighboring districts still affirm, that it runs only on the seventh day, and call it Nahr Sebty, or Seventh-day river. Being, however, Muslims, they connect the supposed flow with Friday, the Muhammedan Sabbath.

Of the streams which descend from Lebanon directly to the sea, the ancient names of only five have been preserved; and these are all situated between Jebeil (Byblus) and Sidon.

The *Adonis*, now called Nahr Ibrahim, a few miles south of Jebeil, is a stream of considerable size.[1] It is crossed by a very high bridge of a single arch, which appears to have stood for ages. The ancient name was derived from the fable of Adonis; who was said to have been killed by a wild boar in the adjacent mountain, and his blood mingled with the stream. His death was annually commemorated in Byblus, in connection with the temple of Venus; at which time the river was believed to become of a bloody color. Something like this is occasionally true at the present day; as seen by Maundrell;[2] the water after violent rains assumes a reddish hue, and discolors the sea to a considerable distance. This is occasioned by a species of minium, or red earth, washed into the river. Such is the solution given by Maundrell; and Lucian relates that an inhabitant of Byblus explained it to him in the same way.[3]

The ancient *Lycus* is now Nahr el-Kelb, or Dog river, a large and rapid stream, having its sources around Jebel Sŭnnîn, and entering the sea between steep and lofty preci-

[1] Cellarius, II. p. 377. Maundrell, p. 45. Later Biblical Researches, pp. 601, 606, 609.

[2] Maundrell, p. 46.

[3] Lucian, de Syria. Dea, § 6, 8.

pices, seven or eight miles northeast of Beirût.[1] The scenery of this mountain gorge is romantic and imposing. The mountains extend out quite to the sea; so that on the north there is only a narrow rocky passage along the shore; while on the south the rampart juts out still further, and an ancient artificial road six feet in breadth is hewn in the rock sometimes fifty feet above the water, for the distance of a mile. A Latin inscription records this as the work of one of the emperors Antoninus, probably Caracalla. Other inscriptions, now illegible, and sculptures mark the progress of Assyrian and perhaps Egyptian conquerors. Higher up in the mountain the region becomes still more wild and romantic; especially around the extensive caverns through which the river flows, situated two hours above its mouth.

The present river of Beirût, which descends upon the plain and enters the sea on the north side of the promontory, is the *Magoras* of the ancients.[2]

In the Nahr ed-Dâmûr, south of Beirût, we have the river *Tamyras* or *Damouras* of the ancients.[3] Its sources are in the mountain, in several valleys, near the road from Beirût to Damascus. In summer it is a moderate stream, but in winter it often swells so suddenly and powerfully as to become impassable; and travellers are occasionally swept away in attempting to ford it. A bridge has often been erected over it in the plains; but has never yet been able long to withstand the fury of the wintry torrent.

[1] Cellarius, II. p. 377. Maundrell, p. 45 sq. Burckhardt, Syria, p. 189 sq. W. M. Thomson in Missionary Herald, 1841, p. 29 sq. Later Biblical Researches, pp. 12, 13, 619.

[2] Pliny, Hist. Nat., 5. 17. Pococke, II. pp. 90, 91. Later Biblical Researches, pp. 12, 14, 15.

[3] Strabo, 16. 2. Polyb. 5. 68. Biblical Researches, II. p. 488 [III. p. 433]. Later Biblical Researches, p. 34.

The Awaly, just north of Sidon, is the ancient *Bostrenus*, which gave and still gives fertility and beauty to the environs of that city.[1] Its source is high up in Lebanon, north of Barûk; and, as we have seen, it flows first south-southwest, and then west to the sea by an alluvial valley, cleaving the mountains to their base. At its angle near Jezzîn, a stream enters it from the north, on which is a beautiful cascade two hundred feet high.[2] Where the river issues from the mountains, its waters are taken out by aqueducts to supply the city of Sidon and to irrigate the surrounding region. Yet it flows on, a fine broad stream, to the sea.

South of Sidon there is no river of importance except the Leontes. All those thus far mentioned are within the long and narrow territory encircled by the latter and the Orontes.

Along the eastern declivity of the mountains which skirt the valley of the Orontes, and also along the whole northern part of Anti-Lebanon towards the east, the only waters are occasional fountains, whose rivulets are quickly lost in the vicinity of their sources. In the district of Damascus, we have an early notice of two streams: "Are not *Amana* and *Pharpar*, rivers of Damascus, better than all the waters of Israel?"[3] These of course must be streams having their sources in or near Anti-Lebanon or Hermon, and flowing eastward through the plain of Damascus.

One of these is undoubtedly the Barada, the *Chrysorrhoæ* of the Greeks.[4] It is the largest and most important stream

[1] Dionysius, Perigetes, 905. Reland, Palaestina, p. 437. Biblical Researches, II. pp. 483, 486 [III. pp. 428, 429]. Later Biblical Researches, pp. 36, 37.

[2] E. Smith, Ms. Journal.

[3] 2 Kings v. 12. The form *Amana* stands in the margin of the English Bible, and is better supported than the reading *Abana*. Later Biblical Researches, p. 447 sq.

[4] Cellarius, II. p. 372. Later Biblical Researches, pp. 446–449.

on the eastern declivity of the mountains, though in itself of moderate size; and flows in a southeasterly direction. Its remotest sources are found in several rivulets which water the plain of Zebedâny near the top of Anti-Lebanon; one of these coming from the northern part of that plain. The united stream passes out of the plain by a deep chasm through the parallel ridge on the east. This ridge, which is hundreds of feet high and at right angles to the direction of the stream, is cleft so as to present two perpendicular faces of rock, with a level pass of only a few yards between them. Just at its eastern mouth is a town, Sûk el-Barada, the site of the ancient Abila. The valley of the Barada now passes through another plain or offset, eight or ten miles broad, to a second similar gap through the next ridge, near the village of Fîjeh, on its left bank.[1] The river is continually enlarged by various fountains and streams; the most remarkable of which is the fountain el-Fîjeh, bursting forth at once, just back of that village, as a copious stream of the purest transparent water, which unites with the Barada after a course of some five and twenty rods. The water of the latter is whitish and turbid; and its stream is not more than half the size of that from Fîjeh.[2] Hence, as in the case of the Orontes and Lîtâny, the latter is often regarded as the source of the Barada.[3] An aqueduct, the remains of which still exist, once conveyed its waters to Damascus.

Below the second gap the narrow valley of the river crosses a desert tract for six or eight miles, to the third and last ridge, through which it breaks by a somewhat wider pass, about two miles distant from Damascus.[4] Above the gap, near the

[1] E. Smith, Ms. Journal. [2] O. v. Richter, p. 157.

[3] So Abulfeda, Tab. Syr., pp. 15, 174.

[4] E. Smith, Ms. Journal. Biblical Researches, III., first edition, App., p. 146.

village of Dummar, the river, which hitherto flows in a channel eight or ten yards wide, and with a current hardly knee deep,[1] divides itself into five arms; not at once, but one after another. Of these, one occupies the channel along the valley; while the rest are conducted at different heights along the two declivities. Another arm goes off to the right above Dummar, and is carried to the village of Mezzeh; and one of the five again divides before reaching Damascus.[2] Thus the waters of the Barada flow through the city and gardens at least seven streams; and being drawn off by many smaller channels for irrigation, they are mostly absorbed in the plain. What remains of the streams is again united southeast of the city; and after a course of seven or eight miles enters the lake or marsh of Damascus, called also el-Heijâny.[3] This lake has no outlet; and receives all the rivers that descend from Anti-Lebanon and Hermon into the plain. Of course it enlarges in winter and decreases in summer. It is surrounded by tracts of reeds and canes. The meadow-like tract adjacent to it on the west is called el-Merj; whence sometimes the whole lake takes the name of Bahr el-Merj.[4] In the Barada we very probably recognize the *Amana* (or *Abana*) of Scripture. The more important river would naturally be named first. A part of Anti-Lebanon was likewise called Amana; and this in all probability would be the tract around the sources of the river of the same name.

More difficult is it to identify the *Pharpar*. Some have regarded it as the short stream at Fîjeh; others, as one of

[1] Paxton's Letters, p. 66. [2] O. v. Richter, p. 154 sq.

[3] Biblical Researches, III., first edition, App., p. 148. Abulfeda, Tab. Syr., p. 156. Addison, Damascus, etc., II. p. 118.

[4] See on Damascus, its rivers and lakes, the author's Later Biblical Researches, pp. 442–452, and the later (1855) work on Damascus and Haurân by J. L. Porter.

the arms of the Barada in the plain. Neither of these conjectures has any plausibility. The plain of Damascus is watered by many streamlets. One of these, called el-Berdeh, has its source in Jebel esk-Sheikh, back of Katana, and runs into the Merj.[1] Another larger stream is the A'waj; which likewise takes its rise from Jebel esk-Sheikh in the direction of Hâsbeiya; flows first southeasterly to Sa'sa', and then northeasterly to the Ghûtah or plain of Damascus; and falls at last into the lake. Its upper part is called also Nahr es-Seibârâny. At Sa'sa' it is described as a rapid and pretty stream.[2] Further down, it flows by el-Kesweh on the borders of the Ghûtah; and is there spoken of by Abulfeda.[3] Next to the Barada this is the most important stream in all the region around Damascus; and is therefore most probably to be regarded as the *Pharpar* of Scripture.[4]

The large *fountains* have been mentioned, which everywhere burst forth along the valley of the Orontes, at the base of the mountains on each side; as also those in the Bŭkâ'a, and along the coast north of Lebanon. A very remarkable fountain, or rather cluster of fountains, exists in the plain just south of Tyre; from which that city was anciently supplied with water by an aqueduct, the greater part of which is yet standing. The place is now called Râs el-'Ain, about two and a half miles from Tyre, and half a mile from the sea.[5] The water is clear and fine, though it holds much lime in solution. It gushes up in the several sources with great force and in very large quantities. In order to raise the

[1] Burckhardt, Syria, pp. 47, 50, 53. See last Note.

[2] Burckhardt, Syria, p. 312. Schubert, III. p. 27. Monro, II. p. 54.

[3] Abulfeda, Tab. Syr., p. 97. Burckhardt, Syria, p. 53. O. v. Richter, p. 162.

[4] Later Biblical Researches, p. 447. See Note [1].

[5] Biblical Researches, pp. 457–459 [III. p. 386 sq.].

fountain to a head sufficient to carry off the water by aqueducts, the ancients built around them elevated reservoirs, with walls of stone immensely thick and fifteen or twenty-feet high, with a broad border or wall around the basin, and steps to ascend to the top. The principal source is that on the west. It has an octagonal reservoir, with a very wide border, and a broad way leading to the top; so that one might ride up and around it. The water is here in constant ebullition; and is now used to turn a mill. Anciently the water from the different fountains was collected by several smaller aqueducts into a large one of strong and excellent masonry, with round arches, apparently of the Roman age. Some of the arches are filled up with stalactites of limestone formed by the trickling of the water. In a far earlier age we know that Tyre was already supplied with water by aqueducts.[1]

The large fountain near Hâsbeiya in Wady et-Teim under Mount Hermon, the remotest perennial source of the Jordan, will be noticed in describing that river.

### III. CLIMATE.

The climate of a country is modified by the character of its surface; and depends greatly on the height of its mountains, the extent of its plains, the abundance or scarcity of its waters, and other like circumstances. Syria has its lofty summits, from the sheltered ravines around which snow never wholly disappears, and likewise its broad and sometimes arid plains, where the heat of summer is intense. Yet in general the climate is temperate and not unhealthy. The

[1] Menander in Jos. Antiq., 9. 14. 2.

three narrow longitudinal strips, of different elevation, into which the country is divided, have their natural effect upon the temperature; first, the low plain along the coast; then the high mountain ranges; and beyond these, the interior elevated plains, which are shut out in a great measure by the mountains from the influence of the sea.

The highest and lowest degrees of the thermometer noted in the English Expedition to the Euphrates in 1835 and 1836 were 115° F. in the shade in summer, and 12° F. in winter.[1] But the places where the observations were made, are not specified; and these extremes are apparently unusual. At Beirût on the coast the thermometer seldom rises higher than 95° in summer, or sinks lower than 50° in winter. Yet in some winters it has fallen as low as 35°; and in 1825 there was snow, hail, and even ice, in March; but the latter was so unusual, that many persons of twenty-five and thirty years of age, had never before seen it.[2] The highest monthly average in summer is about 85°; the lowest in winter about 57°.

On Mount Lebanon, at Bhamdûn near the Damascus road, about four thousand feet above the sea, the highest temperature during the summer of 1843 was 84°; the monthly average of August for two years was 70°; and the general average was twelve degrees lower than at Beirût. At Aithâth south-southeast of Beirût, with an elevation of about three thousand feet, the lowest point observed during the winter of 1842–43 was 40°; the lowest monthly average was 50°, in January; and the general average was about seven degrees lower than at Beirût.[3] In the interior, at Aleppo,

[1] Ainsworth's Researches in Assyria, etc. p. 31.

[2] W. Goodell, in Missionary Herald, 1825, p. 346.

[3] Dr. De Forest in Bibliotheca Sacra, 1844, p. 221.

during the years 1752 and 1753, the mercury rose to 95° in summer, and fell as low as 36° in winter.[1] But the latter point can hardly be accurate; since snow and ice are not unusual in that city. Aleppo lies about twelve hundred feet above the the sea; and its climate is more severe than that of Beirût. Damascus lies still higher; and the average temperature is probably two or three degrees less than at Aleppo. But there is no account of any observations.

The winter and summer in Syria, as well as in Palestine, are distinguished as the rainy and the dry seasons; the former being marked by much rain, and the latter by none at all. The rains in autumn commence somewhat earlier than at Jerusalem; and continue later in the spring. Slight showers occur soon after the autumnal equinox; but the regular rains do not begin to fall until after the middle of October, and then for a time at intervals, often with heavy thunder. December and January are usually months of heavy rains, with not less than twelve to fifteen rainy days in each. During the next three months the rains gradually become less heavy and frequent. In March, and especially April, the weather is variable, with showers and much sunshine. Showers continue to fall in May, and a few even in the first days of June; but during the summer months and until October, with the exceptions specified, rain is unknown.[2] This holds true of Aleppo and the interior, as well as of the coast and mountains. Yet in the night of July 1, 1743, there were thunder showers at Aleppo; an extraordinary phenomenon at that season of the year.[3]

During the intervals of the earlier rains in October and

[1] Russell's Aleppo, I. App., p. 9.

[2] Dr. De Forest, in Bibliotheca Sacra, 1844, p. 221.

[3] Russell's Aleppo, II. p. 289. Comp. Prov. xxvi. 1; 1 Sam. xii. 17.

November, the husbandman ploughs his fields and sows his seed. The trees retain their foliage until December; and the cold does not usually set in until the middle of that month. Even delicate Europeans do not have fires at Aleppo earlier.[1] The cold continues for six or seven weeks. On the coast, frost and snow are very rare. On the mountains snow falls in winter when it rains below, and lies on the highest parts in large masses, so as to block up the passes of Lebanon. In the cultivated parts of the mountains it commonly lies only for a short time. It is mentioned as being worthy of remark, that at Bhamdûn, in the winter of 1844–5, one fall of snow lay for a month on a part of the vineyards, before it entirely melted away.[2] At Aleppo few winters pass without frost, but many without snow; and very rarely does the snow lie more than one day. Hail is not unfrequent in the spring; and the hailstones are sometimes enormous. During thirteen years it happened only three times at Aleppo, that there was ice of sufficient strength to bear the weight of a man; and then only in shady situations.[3] Whenever the atmosphere is clear and calm, the sun has everywhere so much power, that the weather is always mild and even warm.

Spring may be said to commence in February. At Aleppo the almond tree, the peach, and the plum put forth their blossoms after the middle of that month. The trees resume their foliage early in March, and the trees become covered with verdure. The later showers of April and May seem to bring forward the vegetation and ripen the crops. The country is in full verdure and beauty towards the end of April. Early in May the grain begins to turn yellow; the harvest

[1] Russell's Aleppo, II. p. 69. [2] E. Smith in Bibliotheca Sacra, 1846, p. 385.
[3] Russell's Aleppo, II. p. 70.

follows in two or three weeks; and the fields assume a dry and parched aspect. During the summer months, the sky is almost constantly serene, except that sometimes light fleecy clouds slightly intercept the sun's rays; or also there is occasionally a partial haze in the atmosphere. The country is dried up; and the only verdure visible is that of the trees and vines and the few summer crops.[1] How different from the green meadows and pastures of the occident!

The prevailing winds are from the western quarter. At Beirût in summer the wind blows during the day five sixths of the time from the west and southwest. These winds commonly subside soon after sunset; and a land breeze sets in, which, blowing down the mountains, renders the nights comparatively comfortable. Sometime after sunrise the breeze returns again fresh from the sea. In winter the winds are frequently between northeast and northwest. On the mountains they appear to be in general the same as on the coast.[2] At Aleppo westerly breezes prevail during the summer in the daytime, and die away about midnight. They serve to cool and refresh the air; which in their absence or during light breezes from other quarters, is disagreeably sultry. Brisk winds from the east and southeast at Aleppo are dry and hot; they parch the eyes, lips, and nostrils; and produce great lassitude and a sense of oppression at the breast. This is the true *east wind* of Scripture;[3] the *Shŭrkîyeh* (eastern) of the Arabs; under which name it has become known to Europeans as the *Sirocco*.[4] On the coast and in Palestine the Sirocco comes more usually from the southern quarter. At Aleppo in winter and spring the

[1] Russell's Aleppo, II. p. 64 sq.

[2] Dr. De Forest in Bibliotheca Sacra, 1844, p. 222.

[3] Job xxvii. 21; Ezra xvii. 10, xix. 12.

[4] See above, pp. 305–307.

east winds are the coldest; and the more usual winds in those seasons are between that point and the northeast.[1] At Damascus also the prevailing winds in summer are understood to be from the west or southwest; this is the case likewise in the more eastern deserts. In these regions too the Sirocco (or *Simoom*) comes from the west.[2]

The climate of Syria is in general not unhealthy; though this remark applies less to those parts of the coast which are confined to a narrow strip, than elsewhere. Iskanderûn is rendered decidedly unhealthy in summer by the adjacent marshes.[3] In Beirût, which lies directly under Lebanon, where the beams of the sun are reflected down from the whitish masses of the mountains, and the air is moistened by the breezes from the sea, intermittent or bilious fevers not unfrequently prevail in August and September. For this reason the foreign residents usually spend these months in the adjacent mountains; where there is always a pure and healthy atmosphere. In the interior, as at Aleppo, the air is pure and penetrating; though trying to consumptive persons. Indeed, so constant and salubrious is the summer season that the inhabitants are accustomed to sleep for months in the open air upon the flat roofs of their houses without detriment. Yet fevers and dysenteries are not uncommon.[4] The air of Damascus is described as excellent;[5] the abundance of water and the many gardens surround the city with verdure and freshness. Yet late in the summer and in autumn it is subject to violent intermittent fevers, engendered,

[1] Russell's Aleppo, pp. 66, 70.

[2] Burckhardt, Notes on the Bedawins, I. p. 225.

[3] Niebhur, Reisebeschr, III. p. 18.

[4] Russell's Aleppo, I. pp. 63, 64; II. p. 298 sq. E. R. Beadle in Missionary Herald, 1842, p. 235.

[5] Brown's Travels, p. 396.

doubtless, in part by the marshes of the adjacent lake.[1] The climate of Hums and the region round about is spoken of as perhaps the finest in Syria, east of the mountains.[2]

Heavy thunder and lightning, as we have seen, are not unfrequent; but it rarely happens that damage is done by the electric fluid. In summer and autumn vivid flashes of lightning without thunder often illuminate the heavens at night.[3]

### IV. GEOLOGICAL FEATURES: MINERALS, SOIL.

The Syrian mountains consist mainly of limestone; as has been already shown. In Lebanon and Anti-Lebanon the Jura limestone predominates; the mountains of the Nŭsairîyeh verge into chalk; around Mount Casius, are talc, serpentine, and sandstone; while the ridges of 'Amanus are composed of limestone, serpentine, and talc schist.[4] The whole interior region, including the desert, rests on limestone, which often appears upon the surface; as in the vast quarries of Aleppo, and the neighboring naked hills.[5]

Sandstone and likewise greenstone are found in various places in Lebanon and Anti-Lebanon.[6] Indeed, the most important variation from the general limestone formation throughout Syria, consists in the frequent occurrence of greenstone, basalt, and other *volcanic* products, connecting this whole region with the volcanic tracts on the east and

[1] Addison, Damascus, etc., II. pp. 118, 389.

[2] J. King in Missionary Herald, 1825, p. 371.

[3] Compare these remarks on the climate of Syria with the author's minute report on that of Palestine, pp. 288–310.

[4] See p. [II.] [17. i.] Ainsworth, Researches in Assyria, p. 313 sq. Russegger, I. pp. 429 sq., 441 sq.

[5] Russell's Aleppo, I. pp. 3, 52. O. v. Richter, p. 238, 244.

[6] Russegger, I. pp. 780, 786 sq., 795 sq. W. M. Thomson in Missionary Herald, 1841, p. 365.

west of the lake of Tiberias. Throughout Lebanon, from the hills of Galilee northward, lava and greenstone are said to be protruded in many places. Especially is this the case around the villages 'Arečya, Shuwît, and 'Abâdîyeh, on the mountain east of Beirût. The whole of Jebel 'Akkâr is described as volcanic; as also all the eastern part of the adjacent northern plain; and the same feature continues north through the mountains of the Nŭsairîyeh as far even as to the neighborhood of Antioch. Between Hamah and the fortress el-Husn the traveller passes for nearly fifty miles over a volcanic region. As he descends into the plain around the latter, the rocks are greatly variegated; and there are large quantities of globular basalt. Between Hums and el-Husn the same ridges are described as abounding in the "black porous stone" which occurs around the lake of Tiberias.[1] On the coast south of Bâniâs, the ancient Batanaea, a volcanic tract of ten or twelve miles in width runs out to the sea, full of hills of lava and other volcanic products.[2]

Between Lebanon and Hermon the lower part of Wady et-Teim is strewed with lava; and the bitumen pits of Hâsbeiya point to a volcanic origin.[3] East of the mountains the basalt of Haurân extends northward to the borders of the Ghûtah of Damascus. South of Sa'sa' on the A'waj are tracts of basalt; and further towards the northeast that river passes for some distance through a rocky desert region, flowing in a deep channel of the Haurân black stone. The same

[1] W. M. Thomson in Missionary Herald, 1841, p. 365. Buckingham, Arab Tr., pp. 502, 503. [See the author's own observations on this region in Later Biblical Researches, pp. 551–554, 558, 562–567. — Ed.]

[2] W. M. Thomson in Missionary Herald, 1841, p. 100. See also Later Biblical Researches, pp. 397, 408 sq.

[3] W. M. Thomson, Ibid., p. 110. See also Lat. Bib. Researches, pp. 397, 408.

[4] W. M. Thomson in Bibliotheca Sacra, 1846, pp. 186, 187.

tract continues on the right of the stream; and furnishes millstones of the same character for the supply of Damascus.[1] Volcanic masses are likewise frequent in the region of Aleppo.[2]

Connected, doubtless, with these volcanic features, is that terrible scourge of Syria and the east, its earthquakes. As far as history reaches back they have been frequent; and often both in ancient and modern times have Aleppo and Antioch and the towns along the coast been desolated by their ravages. Scarcely a year passes in which shocks are not felt. In 1759 the region of Lebanon was severely visited. In 1822 an earthquake destroyed a great part of Aleppo, and buried multitudes in the ruins. In 1841, between the first of May and the end of December, no less than five slighter shocks were felt in the same city.[3] The great earthquake of Jan. 1, 1837, which destroyed Safed and Tiberias, did not spread its desolations into Syria.

In *mineral* productions Syria as yet appears not to be rich. The meagre mines of *iron* and *coal* in Lebanon have been mentioned.[4] Near Hâsbeiya under Mount Hermon are pits or rather mines of *bitumen*. They are on the eastern declivity of the hill or low ridge, which lies on the west of the stream, about a mile below the bridge. The surface is a chalky rock with nodules of flint; and nothing indicates the presence of such a mineral. The bitumen lies in a stratum twenty feet below the surface. This stratum is said to be eighty feet thick; and is reached by pits or shafts from six to

[1] Schubert, III. pp. 270, 271. Burckhardt, Syria, pp. 284, 312.

[2] Russegger, I. p. 453 sq. W. M. Thomson in Missionary Herald, 1841, p. 241.

[3] Russell's Aleppo, I. p. 72. Volney, Voyage en Syrie, I. p. 276. E. R. Beadle in Missionary Herald, 1842, p. 233 sq.

[4] See above, p. 342.

twelve feet in diameter, through which it is raised by a windlass. It is wrought like coal; and in hewing out the bitumen the workmen leave columns at intervals to support the rock above. It is of the finest quality, and the supply is supposed to be inexhaustible; but being the property of the government, the mines are badly managed and seldom wrought. The mineral is chiefly used in the country as an antidote to insects that destroy the grapes; being mixed with oil and daubed upon the vine near the root.[1]

*Salt* is obtained from the eastern desert. The supply in northern Syria comes from the famous valley or lake of salt, es-Sŭbkh, eighteen miles southeast of Aleppo, near the village Jebûl. In winter the rains and torrents with a few springs convert the surface into a shallow but extensive lake. In summer the water evaporates, leaving a crust of salt of various thickness and quality; this is broken up, sorted, and carried to Jebûl; where it is dried and winnowed, and thence sold to all parts of the country.[2] To supply the more southern parts salt is brought from Kuryetein and Palmyra (Tadmor); near which latter place there are large quantities of salt in the desert, affording a lucrative branch of commerce to the present natives.[3] Indeed, in various parts of the desert, lakes are formed in the rainy season, which extract the salt from the earth; and drying away in summer leave it as a crust upon the surface. An inferior salt of this kind is

[1] Seetzen in Zach. XVIII. p. 342. Burckhardt, Syria, p. 34. W. M. Thomson in Bibliotheca Sacra, 1846, p. 186. E. Smith in Ms. Journal. See a description of these mines after the author himself had visited them, in Later Biblical Researches, p. 379.

[2] Russell's Aleppo, I. p. 55. Maundrell, p. 213. Pococke, II. p. 168.

[3] Bowring's Report on Syria, p. 20. Irby and Mangles, p. 273.

found not far from Kutaifeh, a village on the caravan road from Damascus to Hums.[1]

Along the coast on the north of Tortosa the way is strewed for several hours with *geodes* of very beautiful chalcedony and quartz, with an occasional specimen of agate. These are found in great abundance in the beds of the mountain torrents, and are doubtless washed out of the chalky hills above; in which probably other fine minerals might be found. In the valleys and defiles between Laodicea and Antioch there occurs beautiful jasper of very many varieties and the richest colors. At the site of Daphne the Syrian agate is particularly abundant.[2]

Of *mineral fountains* there are very few. At Tadmor there is a copious spring highly impregnated with sulphuretted hydrogen; which speedily evaporates and leaves the water sweet. This fountain supplied the ancient city in part; and now turns a mill.[3] Some mineral waters, said to be ferruginous, have recently been discovered in the mountains back of Iskanderûn; and other mineral baths, with sulphuric properties, are found in the plains, midway between that place and Aleppo.[4]

The *soil* of the Syrian plains is hardly surpassed in fertility. The Jûneh north of Lebanon, the Bŭkâ'a and the Ghâb with the rich environs of Hums and Hamah, the Ghûtah of Damascus and the plain of Antioch, all are celebrated for their productions; though at the present day they lie for the most part only half tilled. The vast plains around Hums and Hamah are particularly famous for their dark fat soil.[5] The

[1] Pococke, II. pp. 138, 206.

[2] W. M. Thomson in Missionary Herald, 1841, pp. 100, 234, 236.

[3] Irby and Mangles, p. 273. O. v. Richter, pp. 216, 225.

[4] W. B. Barker in Bowring's Report on Syria, p. 114.

[5] O. v. Richter, p. 203. Biblical Researches, III., first edition, App. p. 176.

fertility of the cultivated parts of Lebanon has already been adverted to. On Anti-Lebanon the upper terrace towards the east, the plain of Zebedâny, is well watered and fruitful; but the lower terraces, except where traversed by the narrow valley of the Barada, are barren. This tract indeed is a desert, and is called es-Sahara, reminding one of Africa. North of the Barada too it retains the same character, and is not susceptible of cultivation. Vegetation does not grow in it; nor does rain enough fall for sowing. It is also extremely cold. The only exception to their general barrenness is found in small tracts irrigated by springs of water. In such places the villages are situated, and vegetation is luxuriant.[1] In the region of Aleppo and further south the country is undulating and sometimes hilly. The higher parts are covered usually with a thin whitish mould; the surface of the plains and valleys is a dark or reddish mould, which is very productive.[2] Indeed, in many portions of what is now reckoned to the desert, as in the direction of Palmyra, the soil is good and capable of tillage; requiring only irrigation, which might be supplied from cisterns or reservoirs of rain-water. Even as it is, the ground is covered with aromatic plants and herbs.[3]

### V. TREES AND PLANTS.

The forests of Syria are confined to the mountains, and mainly to the more northern parts. The queen of its ancient forests, the stately cedar of Lebanon, is still found; but not in its former abundance.[4] On Lebanon the pine

[1] Biblical Researches, III., first edition, App. p. 171.

[2] Russell's Aleppo, I. p. 373. [3] O. v. Richter, pp. 208, 209.

[4] See above, p. 342. Biblical Researches, II. p. 493 [III. p. 440]. Later Biblical Researches, pp. 588-598.

(*pinus bruttia*) is now more frequent, growing in tracts near the summit and especially along the eastern declivity; and like the cedars of old, it is exported to Palestine and elsewhere for building.[1] The oak, the walnut, and many other species of trees are scattered over Lebanon; but do not form thickets. Anti-Lebanon has few if any groves; the valonia oak is found along its higher parts.[2] The northern skirts of Lebanon and the northern hills of Jebel en-Nŭsairîyeh are wooded; while the northern portion of the latter mountains, with the spurs and ridges of Mount Casius, are clothed with forests of oak and pine.[3]

Still more is this the case with the ridges of Amanus. So extensive are its forests, that under the dominion of Muhammed Ali of Egypt, vast quantities of timber were annually cut upon the mountains back of Iskanderûn, and sent to Egypt. These forests are mostly of oak and pine, the latter from one hundred to one hundred and fifty feet high; with some beech and linden. In 1837 the timber of about sixty thousand large trees was shipped for Alexandria; two thirds of which was for ship-building.[4] Mingled in the forests, or scattered upon the mountains and occasionally along the coast and on the plains, are the walnut, beech, chestnut, plane, acacia, silver poplar, willow, tamarisk, ash, terebinth (butno), common cedar, laurel, thorn (nŭbk), and various other trees.[5] The Lombardy poplar abounds particularly in

[1] Schubert, III. pp. 347, 353, 370. O. v. Richter, pp. 125, 128. Biblical Researches, III. p. 192, II. p. 338 [III. p. 192].

[2] O. v. Richter, p. 135. Schubert, III. p. 314.

[3] Buckingham, Arab Tr., pp. 505, 506. W. M. Thomson in Missionary Herald, 1841, p. 234.

[4] Bowring's Report on Syria, pp. 11 sq. 66.

[5] O. v. Richter, pp. 101, 108, 128. Schubert, III. pp. 284, 353. W. M. Thomson in Missionary Herald, 1841, p. 234. E. Smith in Ms. Journal.

the plains of Damascus, on the eastern slope of Anti-Lebanon along the Barada, and in the Bŭkâ'a; it is chiefly planted for building.[1] The Pride of India, or Pride of China (*melia azedarach*), of which Tyre is full, is described as a native of Syria.[2] The cypress and lotus are not rare; the carob tree is less frequent, except on the coast.[3] Scattered palm trees are found at Tyre and along the coast, as also at Damascus and as far as Palmyra; but not at Aleppo.[4] Pistacia trees, both wild and cultivated, are common; those in the gardens of Aleppo produce the finest nuts.[5] The oleander shrub (*nerium oleander*), with its magnificent red blossoms, is abundant on the mountains and along the coast.[6]

Fruits of all kinds are abundant; the trees are usually of large size, and around Damascus they furnish the supply of fuel.[7] The olive abounds everywhere on mountain and plain; The Palma Christi (vicinus) is cultivated in gardens, and its oil used chiefly for lamps.[8] Large plantations of the mulberry are frequent; the trees are cropped close, in order to increase the foliage and furnish food for the silkworms. Extensive tracts of vineyards are spread over Lebanon, and around the cities.[9] The fig tree and the pomegranate flourish everywhere; the orange and lemon prefer the coast, the winter

[1] Brown's Travels, p. 397. O. v. Richter, p. 154. E. Smith, Ms. Journal.

[2] Biblical Researches, II. p. 466 [III. p. 400]. Rees' Cyclopaedia, art. *Melia*.

[3] Addison, Damascus, p. 389. Kinneir, Cairo, etc., p. 285. Schubert, III. p. 285. Russell's Aleppo, I. p. 88.

[4] Biblical Researches, II. p. 466 [III. p. 400]. Schubert, III. p. 283. O. v. Richter, p. 225. Russell's Aleppo, I. p. 88.

[5] Russell's Aleppo, I. p. 82 sq. Schubert, III. p. 285.

[6] Russell's Aleppo, I. p. 247.

[7] Hogg's Visit, II. p. 72.

[8] Schubert, III. pp. 285, 286. Russell's Aleppo, I. pp. 79, 80.

[9] Schubert, III. p. 285. Russell's Aleppo, I. p. 80. E. Smith in Ms. Journal.

of the interior, as at Aleppo, being too severe.[1] The almond tree blossoms even on the heights of Lebanon; while apricots, peaches, plums, apples, pears, quinces, cherries, and hazlenuts luxuriate in the gardens.[2]

The gardens abound too in all the esculent vegetables common to the temperate portions of the occident; as melons, cucumbers, squashes, the tomato, the egg-plant, bananas, the leguminous plants, beets, onions, spinach, cabbage, and other roots and greens in endless variety.[3] The potato is little known among the natives; though Burckhardt speaks of it as succeeding in the highest parts of Lebanon.[4] Liquorice grows abundantly in the region of Aleppo towards the desert; and large quantities of it are used in making a sort of Sherbet, or cooling drink, in the summer season.[5]

The chief field grains are wheat and barley. Oats are less common; barley being the usual food of horses.[6] All the various leguminous plants are raised in the fields; also maize and millet (dhurah). Cotton is extensively cultivated.[7] Tobacco, which of course has been introduced since the discovery of America, forms now a great staple of agriculture;[8] that of the Syrian mountains is particularly esteemed by the pipe-loving orientals, and goes by the name of *Jebel*. At the present day the population of Syria is not sufficient for the

[1] Russell's Aleppo, I. p. 89. Schubert, III. p. 285.

[2] O. v. Richter, pp. 112, 92. Schubert, III. p. 284 sq. Russell's Aleppo, I. p. 86 sq. Biblical Researches, II. pp. 479, 480 [III. p. 420].

[3] Schubert, III. p. 285. Russell's Aleppo, I. p. 90 sq.

[4] Burckhardt, Syria, p. 22.

[5] Russell's Aleppo, I. p. 94.

[6] Russell's Aleppo, I. p. 74.

[7] Bowring's Report on Syria, pp. 8, 13. O. v. Richter, p. 112. Schubert, III. p. 286. Russell's Aleppo, I. p. 78.

[8] Bowring's Report on Syria, p. 9. Schubert, III. p. 286. Russell's Aleppo, I. p. 78.

purposes of cultivation. Regions of the highest fertility remain untilled; and the traveller passes for leagues over the richest soil; which is wholly unproductive to man.[1]

The botany of Syria is in general exceedingly rich; especially on Mount Lebanon, where Ehrenberg and Hemprich in two months collected specimens of eleven hundred and forty different species of plants.[2]

## VI. BEASTS, BIRDS, Etc.

The usual domestic quardrupeds of the east, are all found in Syria; the camel, horse, ass, mule, ox, the tame buffalo, sheep, goats, etc. The sheep are mostly of the fat-tailed species; and are commonly mingled in flocks with the goats. Many thousands of sheep are annually brought into Syria from the mountains of Kurdistân.[3] Swine are rarely raised by the natives.[4] Dogs in the east are never kept in the house; but herd together in the streets of the cities without masters, and feed on offal and carcasses; sleeping mostly by day, and barking and howling by night. The grayhound is used for hunting; and there are shepherd's dogs. Of the cat there is also a Persian variety.

Of game, the wild swine are the most important, and are frequent in all parts of the country. Deer are mentioned by Seetzen as found on Mount Hermon; but this may be doubtful.[5] Antelopes are found; especially the fleet and graceful gazelle. Hares are abundant; rabbits are less common. Squirrels are frequent.[6] The *bedan* or mountain

[1] Bowring's Report on Syria, p. 9.
[2] v. Raumer, Palestina, p. 31.
[3] Burckhardt, Syria, p. 26.
[4] Russell's Aleppo, II. p. 152.
[5] Seetzen in Zach. XVIII. p. 543.
[6] Russell's Aleppo, II. p. 159. O. v. Richter, p. 144.

goat of the more southern regions, appears not to frequent the mountains of Syria proper.

Of other wild animals there is quite a variety. The lion, though found in ancient times, has now disappeared. Bears, panthers, and also ounces, are common in Mount Amanus, and are found also on Lebanon and Hermon; the natives call the panthers tigers.[1] Hyenas, wolves, and foxes are not unfrequent. Jackals are very numerous in every part; at night they often flock around the houses and set up a dismal howling. The polecat and hedgehog are not unknown. Rats and mice are common, both in the houses and in the gardens. Hosts of field mice do great damage to the crops, especially around Aleppo and in the plain of Hamah.[2] Moles and bats are also frequent. The hamster (*mus cricetus*) is common. The jerboa (*dipus jaculus*) is very numerous; in some parts of the way between Damascus and Hums, the earth is everywhere perforated by their burrows.[3]

As to BIRDS. Common poultry of all kinds is in plenty. There are also immense numbers of pigeons, both tame and wild. Of game there is an abundance of water-fowl upon the lakes and rivers, as wild ducks, widgeon, teal, and the like. On land there are the quail, partridge, woodcock, plover, snipe, thrush, lark, and others. The kŭtâ of the Arabs (*tetrao alchata*) is particularly abundant in Syria, as well as in the more southern regions. It is a species of grouse, somewhat larger than a partridge; the flesh is black, hard,

[1] Russell's Aleppo, II. pp. 188, 189. O. v. Richter p. 105. Burckhardt, Syria, p. 22. Seetzen in Zach. XVIII. p. 543.

[2] Russell's Aleppo, II. p. 181. Burckhardt, Syria, p. 147. Biblical Researches, III., App. p. 177.

[3] O. v. Richter, p. 203. Described by Russell's Aleppo, II. p. 160 sq.

and dry. This bird ranges in immense flocks throughout all the less inhabited regions.[1]

Among the birds of prey and smaller birds, are hawks and falcons of various kinds, some of which are still occasionally trained for hawking;[2] further, also, the raven, crow, jackdaw, magpie, storks, cranes, the bittern, pelican, lapwing, blackbird, woodpecker; also the nightingale, goldfinch, linnet, wren, sparrows, swallows, and many others. The *semermer* or locust-bird (*tendus rosens*) is highly valued as a formidable enemy of the locust, which it follows and kills in great numbers.[3]

The rivers and lakes are well supplied with FISH. The small stream of the Kuweik at Aleppo has not less than seventeen different species of fish and eels, three of which are unknown in Europe. But the city is in part supplied from the Orontes and the lake of Antioch.[4] The fish of the Orontes at Shŭgr are described by Maundrell as unwholesome; later travellers have found there a species of chub of several pounds weight and very delicate.[5] In the lake et-Taka near the site of Apamea there exists a species called by the Arabs black fish, on account of its coarse ash-colored flesh; it is several feet long, and very abundant. The season of fishing is from November till January; and the fish are sent to Aleppo and other parts of Syria. Carp are likewise taken in the same lake, and sent to Hamah and Hums.[6]

[1] Russell's Aleppo, II. p. 194 sq. O. v. Richter, pp. 201, 208. Burckhardt, Syria, p. 406. Biblical Researches, II. p. 200 [II. p. 620].

[2] Russell's Aleppo, II. p. 196. W. M. Thomson in Missionary Herald, 1841, p. 101.

[3] Russell's Aleppo, II. pp. 205, 230. Biblical Researches, II. pp. 379, 380 [III. p. 252].

[4] See above, p. 353. Russell's Aleppo, II. pp. 207 sq. 216.

[5] Maundrell, p. 5. Monro, II. p. 211.

[6] Burckhardt, Syria, p. 137. Russell's Aleppo, II. p. 217.

Of REPTILES there is the usual variety. Frogs are found in vast abundance, especially in the river of Aleppo; where they are of a large size, and are eaten by the native Christians and French residents. Toads are common, as also the tree-toad or tree-frog. There are tortoises, both the land and water species. A kind of crab unknown in Europe, inhabits the Kuweik, and makes excursions on land in the season of fruit; they are esteemed delicate eating.[1] The whole country swarms with lizards, which delight in old walls and ruined buildings; a particular species, less frequent than others, is the chameleon, with its changing hues.[2] Snakes are common; a harmless kind, of a whitish gray color and two and a half feet long, is often seen in houses, where they destroy mice. Serpents of a more noxious kind are found in the country; but it is rare to hear of mischief done by them.[3] Scorpions are met with in summer nights, crawling in the streets, or on the stairs and flat roofs of the houses; their sting occasions pain and swelling for several hours, but is unattended by any further bad consequences.[4]

Of INSECTS, those made use of by man are, the silkworm in vast numbers for the extensive cultivation of silk as a staple of the country; bees, which are important on account of the great consumption of honey and wax; leeches, found in ponds and brooks, and sometimes taken into the mouth in drinking, where they adhere and give a great trouble to the sufferer; and snails, which are occasionally eaten, though not often. Wasps and ants are also common. Other insect tribes minister to man's discomfort, and are the minor plagues of oriental life. Thus the common fly is very troublesome,

[1] Russell's Aleppo, II. pp. 221, 222.

[2] Russell's Aleppo, II. p. 231. O. v. Richter, p. 144.

[3] Russell's Aleppo, II. p. 224.

[4] Russell's Aleppo, II. p. 223.

and at some seasons intolerably vexatious; as is also the case with various other species which infest man and beast.

Most oriental houses swarm with bedbugs and other like vermin. Fleas exist in myriads; the streets, bazaars, khans, old buildings, and the fields, all swarm with them, so that it is impossible to escape from them in the house or on the person. Even the bath and change of linen is no remedy against fleas; though it avails against lice, which here harbor less in the hair than on the body and undergarments. Still, such are the careless habits of the natives, that travellers rarely escape. Mosquitos and gnats are another like pest; they reign during the whole summer, and are particularly annoying at night. The scolopendra or centipede, is less common than the scorpion; but the wound inflicted by it is reckoned little less venomous than the sting of the latter.[1]

Of all the insect tribes the locust is the greatest scourge to the country and is the most dreaded by the husbandman. The peasants fight them with fire and water; but no means of defence seem to be of any avail against their immense numbers. They sweep over a country; and in a few days destroy every green thing. They come in vast flights, darkening the air; and sometimes alight in masses a foot deep upon the surface of the ground. At one time during the Egyptian rule, the army of Ibrahim Pasha was employed in an attempt to destroy them; and they gathered up no less than sixty-five thousand ardebs, or more than three hundred thousand bushels. Yet no efforts seem in any degree to diminish their numbers. Such destructive swarms do not usually visit Syria except at intervals of several years; though few years pass that mischief is not done by them in some part or other

[1] Russell's Aleppo, II. pp. 222-228.

of the country. Their most formidable and persevering enemy is the locust bird.[1]

NOTE. The vegetable and animal kingdoms in Syria and Palestine are similar; though better known in the former. They have, therefore, here been described in greater detail, in order that less space may be required for them in the account of Palestine.

[1] Russell's Aleppo, II. p. 228 sq. Bowring's Report on Syria, p. 10.

# INDEX.


PAGE

A.

'Abadîyeh, village below Lake of Tiberias . . . . . 315
Abana. See Amana.
Abaraim, Mount . . . . . 61–62
'Abilîn, Wady, probably valley of Jiphthah-el . . . . . 106
Absalom, pillar of . . . . . 101
Abulfeda, work of, on Syria . . . 9
Abu 'Obeida, village . . . . 177
Abu Zabûra, river, description of . . . . . 108, 192
Adonis, river, now Nahr Ibrahim 360
Adora, town, now Dûra . . . 118
'Afrîn, river, at Lake of Antioch 350
Agate, specimens of, near Daphne 376
Ahmed, Wady, near Bethlehem . 115
Ahsy, Wady el, and river, Scripture Zered, boundary between Moab and Edom . . 88, 183–184
Ai, pools at site of . . . . . 280
'Ain Abûs, village . . . . . 109
'Ain el-'Arûs, at foot of cliffs of Akkrabim . . . . . 258
'Ain 'Askar, near Nabulus . . 248
'Ain el-Bassa, near Hebron . . 249
'Ain el-Beida, near Beisân . . 254
'Ain Belâteh, in the Huleh 250, 251
'Ain ed-Deir, near Beisân . . . 253
'Ain ed-Dirweh, near Hebron . 249
'Ain Dûk, fountains of . . . . 254
'Ain Falûj, watershed at, between Lîtâny and Jordan rivers . . 348
'Ain Feshkhah, at Dead Sea, description of . . . . . 256
'Ain Fûlîyeh, fountains between Tiberias and Magdala . . . 253

PAGE

'Ain Fûsâil . . . . . 254
'Ain el-Habîs . . . . . 242
'Ain Hajla, near Jericho . . . 255
'Ain Hanîyeh, or St. Philip's well . . . . . 242
'Ain el-Haramîyeh . . . . . 249
'Ain Jalûd, fountain of Jezreel 91, 185, 245
'Ain el-Jedîd, near Hebron . . 250
'Ain Jehair, near Dead Sea . . 256
'Ain Jenneh, village . . . . . 262
'Ain Kenâ'a, near Hebron . . . 250
'Ain Kashkala, near Hebron . . 250
'Ain Lifta . . . . . 242
'Ain Makhuz, near Beisân . . 253
'Ain Wady Mâlih, or salt fountain . . . . . 254
'Ain el-Meiyiteh, at Jezreel . . 185
'Ain Mellâhah, great fountain in the Hûleh . . . . . 250, 251
'Ain el-Mudauwarah, or round fountain, near Magdala . . . 252
'Ain Nunkur, near Hebron . . 249
'Ain Sakût, near Beisân . . . 254
'Ain Sâra, near Hebron . . . 250
'Ain Shukâf . . . . . 242
'Ain Sinai . . . . . 241
'Ain es-Sultân, at Jericho . . 94, 255
'Ain Tabigah, at plain of Gennesareth . . . . . 77
'Ain Terâbeh, at Dead Sea . . 50
'Ain et-Tîn, near Khan Minyeh . 252
'Ain Yalo . . . . . 242
Ajalon, valley of . . . . . 113
Fountain of . . . . . 242, 243
'Ajlûn, Wady of . . . . . 86
Jebel 'Ajlûn . . . . . 57

'Akîb, Wady el, in Haurân . . 174
'Akîr. See Ekron.
Akhdar, Nahr or river, south of Caesarea . . . . . 192
Aklîm el-Bellân . . . . . 85
Akrabbim, or Scorpion Cliffs . 17, 53
'Akrabah, ancient Akrabatene, pool at . . . . . 281
'Akûr, village . . . . . 115
Alla Specula, of the Crusaders, now Tell es-Safieh . . . . 118
'Allân, Wady, in Haurân . . . 174
'Allar es-Sifla, fountain of . . 244
Aleppo, climate and height of . 368
'Aly, Wady, course of . . . . 112
Amana or Abana, river of Damascus. (See Barada). . . . 362
Amanus, Mount . . . . . 333
Passes of . . . . . 336
Ammon, Rabbath, now 'Ammân, fountain at . . . . . 262
Amorites, Mount of . . . . . 53
'Amûd, Wady el, near Safed . . 89
'Amudîyeh, stream in the Hûleh 250
'Amwâs, ancient Nicopolis, fountains at . . . . . 243
Anderson, Dr. H. J., Geological Report of . . . . . 171
'Anebta, village . . . . . 108
Anem, town . . . . . 239
Animals of Syria . . . . 381, 382
'Anjar, fountain of the Lîtâny . 355
Antioch, lake of . . . . . 350
Antipatris, now Kefr Sâba . . 109
Apamea, site of . . . . . 353
Aqueducts, ancient, at 'Ain Dûk 'Ain es-Sultân, at 'Akka, at Hebron; ancient acquaintance with the principle of . . . 284–286
'Arab, Wady el, in Haurân . 175, 176
'Arabah . . . . . 62
Hebrew name to whole Jordan valley . . . . . 73, 74
Arbela, now Irbid, Scripture Beth Arbel, fortified caves of . . . 90
Ard el-Hemâr, district of . . . 262
'Areiyeh, Wady and fountain in, at Dead Sea . . . . . 258
'Arîsh, village and Wady of, river of Egypt . . . . 17, 123
'Arjân, fountains at, in Jebel Ajlûn . . . . . 261
Arnon, valley of, now Wady Môjib, with river . . . . . 88, 180
'Arny, river . . . . . 85
Aroer . . . . . 181
Arsûf, village and river of, ancient Apollonia . . . . 110, 192, 193
'Ary, in Haurân . . . . . 173
'Asal, Wady el, in Hermon . . 84
Asochis, plain of, now el-Buttauf . . . . . 130
Asor, plain of . . . . . 128
Asphaltum, at Dead Sea . . . 220
Atmosphere, purity and clearness of in Palestine . . . . . 307
Atallah, Wady . . . . . 112
'Attârûs, Jebel, east of Dead Sea . . . . . 61
Town of, Scripture Ataroth. . 67
Aulon, Greek for el-Ghôr . . . 74
'Aujeh, river near Yâfa . . . 109
Great fountain of . . . . . 193
Wady el, west of the Jordan . 94
'Awaj, river, ancient Pharpar . 364
Branches of . . . . . 172, 365
Awaly, river, ancient Bostrenus 341, 362
'Aweirid, Wady el, in Haurân . 174
'Ayûn, Wady el, in Upper Galilee, also called Wady Azziyeh 105
Azotus, Mount of . . . . . 47
'Azzûn, Wady el, course of . . 109

B.

Baalah, Mount . . . . . 47
Ba'albek, elevation of . . . . 348
Baal Hermon, Mount . . . . 347
Baal Meon . . . . . 64, 178
Baniâs, anc. Caesarea Philippi, site of . . . . . 75, 150
River of . . . . . 150, 151
Barada, river, anc. Amana, source 345
Course . . . . . 363
Bashan, extent of . . . . . 56
Batanaea, district of . . . . . 56

Batîhah, plain of at Lake Tiberias 77
Bedawîyeh, Wady el, called also Wady Melek . . . . . 107
Beersheba, wells of . . . . . 265
Beirût, river of, anc. Magoras . 361
Beit Hanina, Wady el . . . . . 114
Fountains in . . . . . 242
Beit Jala, village . . . . . 115
Beit Jenn, village . . . . . 105
Beit Jibrîn, and Eleutheropolis . 118
Wells of . . . . . 269
Beit Nettîf . . . . . 117
Beit Nûkkûba . . . . . 115
Beit Nûsîb . . . . . 117
Beit Sakârieh . . . . . 116
Beit Tulma, ruin of . . . . . 242
Belât, Wady, called also Wady Kûrâwa . . . . . 110
Belka, district and plain of, anc. southern Gilead, river of at Tantûra . . . . . 59, 190, 191
Belus, river, now Nahr Na'mân 106, 187
Beni Hamâdy, Wady, at Dead Sea . . . . . 227
Hot spring in . . . . . 260
Beni Na'ûm, east of Hebron . . 274
Berachah, valley of . . . . . 103
Besor, brook of, now Wady 'Arârah . . . . . 121, 122
Bethany, road to from Jerusalem, 43
Beth Arbel. See Arbela . . .
Beth-barah . . . . . 168
Bether and Bithron, mountains of . . . . . 68
Beth-haccarem . . . . . 44
Beth Hogla, now 'Ain Hajla . . 256
Beth-horons . . . . . 112, 270
Beth Saida, site of . . . . . 155
Beth-Shemesh . . . . 46, 114, 270
Bîreh, Wady el, from Tabor, . 90
Village . . . . . 114
Fountains at . . . . . 241
Bîr Beshât, cistern . . . . . 275
Bîr Ejda, great cistern of . . . 274
Bîr Jenâb, Wady, also Wady Ribâh 110
Birds of Syria . . . . . 382
Birket el-Khulîl at Dead Sea . 217
Birweh, fountain of . . . . . 243
Bittîr, Wady, village, . . . . 115
Fountain of . . . . . 242
Bitumen, mines of at Hasbeiya . 374
Bordeaux pilgrim, Itinerary of . 8
Bozrah, now Busrah, in Haurân . 174
Fountains at . . . . . 261
Brocardus, work of, on Palestine 9
Bujjeh, lake of, in Haurân . . 174
Bûka'a, valley of, anc. Coele-Syria 347
Bûrdôny, stream from Zahleh . 355
Bureij, offset from the river of Dan 150, 152.
Bureir, village . . . . . 118
Bûrghûz, bridge, chasm of Leontes at . . . . . 356
Bûrkîn, village . . . . . 134
Bursheh, Wady . . . . . 93
Bûttauf, el, plain of Zebulun 22, 130

C.

Callirrhoë, called also Baris, hot fountains . . . . . 179, 180
Cana of Galilee . . . . . 130
Canaan, signification of the name 15
Capernaum, site of . . . . . 252
Carmel, Mount, description of 28–30
Sacrifice of Elijah at . . . 30–31
Casius, Mount, promontory, now Jebel Akra . . . . . 336
Cedars of Lebanon . . . . . 342
Chalus, now Kurreik, river of Aleppo . . . . . 336
Cherith, brook of. See Wady Kelt.
Chinnereth, Hebrew for Gennesaret . . . . . 203
Cisterns, frequency and character of . . . . . 272
Near Hebron and Jerusalem . 274
As receptacles for grain . . . 277
Climate, of Palestine . . . . 288
Healthiness of . . . . . 308
Of Syria . . . . . 366
Temperature . . . . . 367
Coele-Syria. See Bûka'a.
Costigan, explorer of the Jordan 169
Coal in Lebanon . . . . . 342
Craters, extinct . . . . . 317

D.

Dale, Lieut . . . . . 171
Damascus, climate and elevation of . . . . . 371
Damûr, river, anc. Tamyras . . 361
Dan, town . . . . . 81.
Leddân, or great fountain at 150
Wady ed Dân, in Haurân . . 173
Dâniyâl, village east of Lydda . 269
Daumeh, village . . . . . 248
Dead Sea . . . . . 10
Lower level than the Mediterranean . . . . . 35
Mountains west of . . . 50–53
Mountains east of . . . . 60
Description of the sea, form and extent, Hebrew name of 206, 208
Depth of . . . . . 208
Depression . . . . . 209
View of, from the western cliffs 210–212
Analyses of its water . . 212–214
Bathing in . . . . . 215
Evaporation from . . . . . 217
Deposits of salt . . . 217, 218
Stories of . . . . . 219
Climate . . . . . 219
Asphaltum . . . . . 220
Character of the shores . . 221–223
Salt marsh at the southern end 223
Minerals of . . . . . 224
Peninsula of . . . . . 225
Supposed islands in . . . . 228
The ford across the sea . . . 229
Navigation of . . . . . 230
Volcanic rocks about . . . 323
Debir, now Dewirbân . . . . 249
Debûrieh, village at Tabor and stream from . . . . . 188
Deidebeh, hill of . . . . . 106
Deir Estieh, village . . . 109, 249
Delâta, village . . . . . 315
Der'a, in Haurân . . . . . 174
Dera'ah, Wady ed, from Kerak . 88
Dedârah, stream of, branch of Jordan . . . . . 146, 184
Derejeh, Wady ed . . . . . 104
Dew, abundant in Palestine . . 294
Dibon . . . . . 88
Dibs, sirup from grape juice . . 343
Dor, now Tantûra, river of . . 191
Dothân . . . . . 107
Plain of . . . . . 134
Fountian at . . . . . 246
Dûk, fountains of . . . . . 80
Aqueduct from . . . . . 284

E.

Earthquakes, frequency of . . 324
Earthquake of Uzziah . . . 325
Other historical earthquakes 325–327
Of Syria . . . . . 374
Ebal, Mount, description of . . 37
Edrei, now Edhra' . . . . . 173
Egypt, river of, now Wady el 'Arish . . . . . 17, 123
Ekron, now 'Akîr . . . . 47. 270
Elah, now Wady es-Sŭmt . 71, 117
Eleale, site of . . . . . 60
Eleutherus, river, now Nahr el-Kebîr . . . . . 358
Elusa, now Khŭlasah . . . . 123
Enam, town . . . . . 240
En-eglaim . . . . . 239
Engannim, now Jenîn . . . . 239
Engedi, mountains of, wilderness 50–51
Fountains of . . . . . 257
En-Haddah . . . . . 239
En-Harod in valley of Jezreel . 240
En-Hazor . . . . . 239
En-Hattanin . . . . . 240
En-Mishpat . . . . . 239
En-rogel, well of . . . . . 98
En-shemesh . . . . . 240
En-tappuah . . . . . 240
Endor, site of . . . . . 27, 188
Enkheileh, branch of river Arnon, also called Lejûm, Scripture Nahaliel . . . . . 181
Enon . . . . . 240
Ephraim, Mount, region of . . 35
Ephron, Mount . . . . . 45
Eshcol. See Hebron.
Esdraelon, plain of Jezreel . 32, 131
Fountains in . . . . . 245
Eshmishkîn, village . . . . . 173

Etam, fountain of . . . . . 284
Eunuch, place of baptism by Philip . . . . . 119

F.

Fahil. See Pella.
Failak, village . . . . . 109
River of. See Arsûf.
Fâr'ia, plain of . . . . 48, 79, 92
Stream of . . . . . 186
Fendekûmieh, ancient Pentecomia, fountain of . . . . . 246
Feranj, Wady el . . . . . 118
Fever, malarial, prevalence of in Jerusalem . . . . . 309
Fîjeh, fountain of . . . . . 363
Fîk, Wady el, east of Tiberias . 86
Village and fountains . . . 261
Fish of Syria . . . . . 383
Fogs, common in Palestine . . 294
Fountains, remarks upon . . . 238
Scripture names four fountains . . . . . 239, 240
Fountains of the Western Plain 243
Of hill-country west of the Jordan . . . . . 244
In the Ghôr . . . . . 250
Of hill-country east of Jordan 260
Warm and mineral fountains . 263
Frank Mountain . . . . . 44
Frost infrequent in Palestine . 291
Fruits of Syria . . . . . 379
Fuheis, fountains near . . . . 262
Fûsaîl, ancient Phasaëlis . . . 93

G.

Gaash, hill of, grave of Joshua 41, 111
Gabaon, Mount . . . . . 42
Gadara, city of, now Um Keis, warm springs at . . . . 175, 263
Gaulonitis. See Jaulân.
Gennesareth, plain of . . . . 77
Lake. See Tiberias.
Geodes, of quartz and chalcedony 376
Geology of Palestine . . . . 311
General limestone formation . 312
Magnesian limestone or dolomite 313
Sandstone formation . . 313, 314
Conglomerate, marl . . . . 314
Volcanic tracts . . . . 314–324
Gerar, valley of . . . . . 123
Wells of Isaac . . . . . 266
Gerizim, Mount . . . . . 37
Seat of the Samaritan temple . 39
Geshur, and Geshurites . . . . 155
Ghâb, el, valley and plain of the Orontes . . . . . 337, 353
Ghâr, Wady el, west of Dead Sea 104
Wady in Haurân . . . . . 173
Ghôr, valley of the Jordan, mountains of its western side . . 48
Extent and connections . . . 72
'Arabah its Hebrew name . . 73
General features . . . . . 75
Valleys or plains in it . . 80, 138
Side valleys from the east . . 83
Side valleys from the west . . 89
Ghŭjar, village . . . . . 148
Ghurâb, Wady el . . . . 46, 114
Ghûtah, plain of Damascus . . 350
Gibeah, hill of, now Tuleil el Fûl 42
Gibeon, valley of . . . . . 137
Fountain at . . . . . 241
Pool of . . . . . 279
Gihon, fountain of . . . . . 100
Acqueduct from . . . . . 101
Gilboa, Mount . . . . . 26–28
Village, now Jelbon . . . . 133
Gilead, land or mount of . . . 57
el-Belka, southern district of . 59
Gophna, now Jufna . . . . . 111

H.

Hableh, village . . . . . 109
Cisterns at . . . . . 275
Hail in Palestine . . . . . 291
Halhûl, village . . . . . 120
Hamah, city, and course of Orontes at . . . . . 352
Hamâm, Wady el, fortified caves in. See Arbela.
Hammath, probable Hebrew name of Tiberias . . . . . 206
Hâmûl, Wady el . . . . . 105

Hâmy Sŭkker, Wady in Haurân 174
Hannathon, town . . . . . 106
Haram of Jerusalem, over Kidron 97
Harvest, seasons of, in Palestine 301
Hasbâny, river or Upper Jordan 146
Junction with other branches of Jordan . . . . . 152
Not mentioned in Scripture , 154
Hasy, Wady . . . . . 118
Hattîn, village, scene of Saladin's victory over the Crusaders . 22
Kŭrûn Hattîn, supposed place of Sermon on the Mount . 22
Fountain of . . . . . 245
Haurân, mountains of, ancient Alsadamus . . . . . 55, 56
Plain of, or en-Nûkrah . . . 139
Extent . . . . . 319
Hazor, also Asor, now Tell Khuraibeh . . . . . 129
Hazûr, 'Ain, south of es-Salt . . 262
Hebrân, in Haurân . . . . . 261
Hebron, vale of, same with brook of Eshcol . . . . . 120–122
Pool of . . . . . 278
Heish, Jebel . . . . . 54, 346
Hemâr, Wady el . . . . . 86
Hendâj, Wady el, at the Hûleh . 89
Hermon, Mount, Little Hermon . 26
Great Hermon, or Jebel esh-Sheikh, valleys of . . . . 84
Scripture allusions to . . . . 346
Other names . . . . . 347
Herodium, site of . . . . . 44
Heshbon, site of . . . . . 60, 64
Fountain at . . . . . 263
Wady Hesbân, or Heshbon . . 87
Hieromax, river. See Yarmuk.
Hinnom, valley of . . . . . 45
Description of . . . . . 98
Hizmeh, fountain near . . . . 242
Hor, Mount, at northern boundary of Palestine . . . . . 345
Hot and saline springs . . . 260, 263
Hûj, village on the road to Gaza 269
Hûleh, lake of . . . . . 10
Plain, description of . 75, 76, 198
Fountains of . . . . . 250
Hums, plain of . . . . . 10
Lake of . . . . . 352
Hŭreir, Wady in Haurân . . . 173
Hŭrmul, village near source of Orontes . . . . . 351
Hûsân, fountain of . . . . . 242
Husn el-Akrâd, castle in northern Syria . . . . . 337

I.

Ibrahîm, Nahr. See Adonis . . 360
Idhna, ancient Jedna . . . 118, 269
Insects of Syria . . . . . 384
Iksâl on Esdraelon . . . . . 188
Iron Mountain, of Josephus . . 67
Iskanderûn, or Alexandretta, unhealthiness of . . . . . 371
Isma'îl, Wady course of . . . 114
Issus, bay of . . . . . 333
Itineraries, of the Middle Ages . 8
Iturea, district of . . . . . 85, 319

J.

Jabesh Gilead . . . . . 86
Jabbok, river, now ez-Zŭrka 57, 176, 177
Jabneh or Jammia, now Yebneh 113
Jacob's well . . . . . 137
Description of . . . . . 267
Jalûd, stream of, description . . 185
Jasper, found in Lebanon . . . 376
Jaulân, district of, ancient Gaulonitis . . . . . 54
Volcanic character of . . . . 319
Jearim, Mount . . . . . 46
Jeba', village, fountain of . . . 246
Jebel 'Ajlûn, description of . . 57
Jebel 'Akkâr, volcanic character of . . . . . 373
Jebel 'Attârûs. See 'Attârûs.
Jebel Haurân . . . . . 54, 321
Jebel Heish . . . . . 54, 346
Jebel Jel'âd . . . . . 58
Jebel Keneiseh, on Lebanon . . 340
Jebel Mukhmal, high point of Lebanon . . . . . 340
Jebel en-Nusairîyeh . . . . . 337
Jebel Osha', or Hosea, in Gilead 59
Jebel Rîha . . . . . 337

Jebel Rîhân, southern part of Lebanon . . . . . 341
Jebel Sheikh. See Hermon.
Jebel Shîhân, east of Dead Sea . 68
Jebel Sunnîn, highest point of Lebanon . . . . . 340
Jedûr, fountain near es-Salt . . 262
District, ancient Iturea . . . 319
Jehoshaphat, valley of . . . . 102
Jenîn, ancient En-gannim . . . 239
Fountain at . . . . . 246
Jennany, river . . . . . 85
Jerash, ancient Gerasa . . . . 177
Jericho . . . . . 80
Water of . . . . . 94, 186
Jermak . . . . . 21
Jett, village . . . . . 108
Jezreel, now Zer'în, valley of 26, 78, 91
Jezzîn, town in Lebanon . . . 341
Jiljûlieh, village . . . . . 110
Jiphthah-el, valley of . . . . 106
Jish, extinct craters near . . . 317
Jisr Benât Ya'kôb, bridge over Jordan . . . . . 155
Jisr Dûmieh, Roman bridge over Jordan . . . . . 159
Jisr el-Hadîd, on the Orontes . . 353
Jisr el-Mejâmi'a, over Jordan . . 158
Jisr es-Semakh, ruins of, over Jordan . . . . . 157
Job, well of, Scripture En-rogel 98, 269
John the Baptist, scene of his execution . . . . . 67
Of his baptizing . . . . . 168
Fountain of . . . . . 242
Jordan, valley of. See Ghôr.
Description of the western range along its valley . . . . 32, 33
Divisions . . . . . 144
Signification of its name . . 145
Sources . . . . . 146
Great fountain at Dan . . . 149
Source from Banias . . . . 150
Junction of its streams, their relative size . . . . 152, 153
Historical notices of these fountains . . . . . 153
Distance between its upper lakes 155
Entrance into Lake Tiberias . 156
Rapids and shallowness in summer . . . . . 157
Lower Jordan . . . . . 159
Fords of . . . . . 160
Place of bathing . . . . . 160
Entrance into Dead Sea . . 161
General features of the Jordan . . . . . 161
Height and extent of its terrace . . . . . 162, 163
Descent and overflow of . 162, 163
Loneliness of its valley . . . 164
Lack of fish . . . . . 165
Jordan as a boundary . 166, 167
Place of John's baptizing . . 168
Crossed by Christ . . . . . 168
Exploration of . . . . . 168
Tributaries . . . . . 171
Jotapata, now Jefât . . . . . 106
Jubeibeh, fountain . . . . . 263
Judah, Mount of, or hill-country of . . . . . 35
Jufna. See Gophna.
Jûneh, bay of in Kesrawân . . 350
Jûnia, or Jûn 'Akkâr, plain along coast of Northern Syria . . . 338
Justinian, fortress of on Gerizim . . . . . 40

K.

Kabîreh, fountain of . . . . . 243
Kadesh Barnea, probably 'Ain el-Weibeh . . . . . 17
Kadesh Naphthali, now Kedes . 75
Plain of . . . . . 128
Fountain of . . . . . 128
Kâkôn, tower of . . . . . 94
Kalûnsaweh, village . . . . . 108
Kana, village and stream in Anti-Lebanon . . . . . 355
Kânah, Wady . . . . . 109
Kara Su, river in north of Syria 336
Kûshâbeh, Wady at Banias . . 150
Kasimîyeh, name for river Lîtâny 357
Kaukab, village . . . . . 106
Kefr Hûneh, village in Lebanon 341
Kefr Kûd, ancient Carpacotia . 135

Kefr Menda, village . . . . . 106
Kefr Sâba, ancient Antipatris . 270
Kelb, Nahr el, or Dog River, anc. Lycus . . . . . 361
Kerak, village, ancient Kir Moab 68
Valley and stream of . . . . 183
Fountains at . . . . . 263
Kesla, village, ancient Chesalon . 46
Kesrawân, district of . . . . 350
Keziz, valley of . . . . . 82
Khân el-Lubban, fountain at . . 249
Khân et-Tŭjâr, fountain at . . 245
Khân Yûmas . . . . . 123
Khanzîrch, village, fountains of . 263
Khanzîr, Wady, ancient Berachah . . . . . 104
Khirb el-Lauz . . . . . 242
Khiyam, village . . . . . 147
Khŭrdela, bridge over the Leontes 357
Khŭdr, el, fountains of . . . . 242
Khŭlîl, Wady, vale of Hebron . 121
Kidron, valley of . . . . . 96, 97
Kilkîlieh, village . . . . . 109
King's Dale . . . . . 101
Kirjathaim . . . . . 67
Plain of . . . . . 142
Kirjath Jearim . . . . . 46
Kir Moab. See Kerak.
Kishon, river, now Nahr el-Mukŭtta' . . . . . 107, 187
Sources . . . . . 188–190, 243
Kŭbâ'a, village, and fountain at . 251
Kŭbâb, village . . . . . 112
Grain cisterns at . . . . . 277
Kŭbalân, village . . . . . 110
Kŭbâtieh, village . . . . . 135
Kŭl'at el-Kûtrâneh . . . . . 181
Kul'at er-Rŭbŭd . . . . . 87
Kul'at ez-Zerka . . . . . 177
Kŭlônieh, village . . . . . 115
Fountain of . . . . . 242
Kŭnawât, Wady, branch of the Yarmuk . . . . . 173
Scripture Kenath, village and fountains of . . . . . 261
Kuneitirah, village . . . . . 172
Kurâwa, plain of Wady Fâri'a 79, 111
Kureiyeh, in Haurân . . . . . 174
Kŭrmŭl, village . . . . . 120
Kŭrn, Wady . . . . . 105
Kŭrnâyil, village and coal mines in Lebanon . . . . . 342
Kŭrn Sŭrtabeh, promontory . . 33
Description of . . . . . 48, 79
Kŭstŭl, village, site of . . . . 46
Kuweik, river of Aleppo, fish of 351
Kûweh, natural bridge over the Leontes . . . . . 356
Kûza, village . . . . . 109

L.

Larissa, site of . . . . . 353
Lâtrôn, village . . . . . 33
River . . . . . 112
Lebanon, Mount, description of . 339
Signification of its name . . 340
Geological formation . . . . 342
Coal mines in . . . . . 342
Cedars and trees of . . . 342, 343
Wine of . . . . . 343
Fertility . . . . . 344
*Anti-Lebanon*, description of its range . . . . . 345
Southern portion or Hermon . 346
Lebweh, village, source of the Orontes . . . . . 351
Leddân, great fountain of the Jordan . . . . . 150
Legio. See Megiddo.
Lejah, volcanic district of the Haurân . . . . . 320
Lejûm, branch of Arnon . . . 181
Lejjûn, village . . . . . 33
Fountain . . . . . 246
Lions, not found in Syria . . . 382
Lîtâny, description of its gorge 354–358
Locusts, of Syria . . . . . 385
Locust birds . . . . . 386
Lubban, plain of . . . . . 111
Ludd, Wady, also called Muzeiri'ah . . . . . 111
Luweizâny, fountain of, branch of Upper Jordan . . . . 148, 316
Lydda, village of . . . . . 33
Lynch, expedition of . . . . 170
At Dead Sea . . . . . 232

M.

Macherus, fortress of, over Dead Sea, scene of John the Baptist's execution . . . . . 67
Mahanaim . . . . . 86
Makhrûd, Mount of . . . . 32, 78
Mamre, plain of . . . . . 138
Maresha, town of . . . . . 118
Mârôn, St., cave of, at the Orontes 352
Mar Saba, convent of . . . . 98
Masada, fortress of, over Dead Sea . . . . . 51
Cisterns of . . . . . 273
Mauz, Wady from Pella . . . 259
Megiddo, plain of, Scripture name for Esdraelon . . . . . 189
Meirôn, fountain near . . . . 244
Mejdel Yâba, village . . 110, 193
Merj el-Ghûrûk . . . . . 135
Merj Ibn 'Amir, Arabic name for plain of Esdraelon . . . . 134
Merj Yafûny . . . . . 84
Merom. See Hûleh.
Mezârîb, in Haurân, lake at 173, 174
Mezra'ah, village at isthmus of Dead Sea . . . . . 227
Mezzeh, village near Damascus . 364
Milh, Wady, south of Carmel . 29
Minerals of Syria . . . . . 374
Mizpeh, site of . . . . . 42, 85
Moab, region and plain of . . . 62
Moladah, now el-Milh . . . 122, 269
Molyneux, expedition of on Dead Sea and Jordan . . . . . 169
Mons Angaris, of Pliny . . . 47
Mons Bargylus, situation of . . 337
Montfort, castle of, now Kûrein . 105
Moreh, plain or oak of . . . . 138
Mount of the Beatitudes . . . 22
Of Precipitation near Nazareth 23
Of Transfiguration . . . . 26
Mountain of Salt, at Dead Sea . 52
Mu'akkar, Wady in Haurân . 174
Mughannîyeh, branch of river 'Awaj . . . . . 172
Mughâr, village and fountain at 251
Mughîtbeh, pass over Lebanon . 340
Muhauwat, Wady . . . . . 314
Mûkhna, plain of . . . . . 136
Muntâr, wely el . . . . . 48
Musheirifeh, fountains of . . . 243

N.

Nâbulus, ancient Shechem and Sychar . . . . . 108
Numerous fountains at . . 247, 248
Nahleh, fountain of . . . . . 355
Nahr Na'mân, ancient river Belus 106
Nahr Rûbîn, valley of . . . . 113
Naphthali, region of . . . . . 21
Nebo, Mount . . . . . 61
City of . . . . . 64
Neby Samwîl, probable site of Mizpeh . . . . . 42
Nejrân, village . . . . . 173
Nephtoah, fountain of, now 'Ain Kârim . . . . . 45, 240
Nimrah, now Nimrîn . . . . 87
Waters of . . . . . 259

O.

Offence, Mount of, near Jerusalem . . . . . 43
Olives, Mount of, description of . 43
Ono, valley or plain of . . 113, 127
Onomasticon, of Eusebius . . 8

P.

Palestine, middle portion of the tract between Asia Minor and the Red Sea . . . . . 2
Its central position in the ancient world . . . . . 4
Early and modern writers on 8–11
Boundaries of . . . . . 16–18
Panium, temple and cave at Banias . . . . . 151
Pella, site of, now Fahil, fountain of . . . . . 259
Peor, Mount . . . . . 61, 65, 66
Perazim, Mount . . . . . 45
Phagor, or Phogor, site of . . . 242
Pharpar. See river A'waj.
Phenician plain . . . . . 349
Phiala, lake of, now Birket er-Râm . . . . . 75, 196–198

Philistines, plain of the . . . 127
Pierius, Mount . . . . . 335
Pine forests of Amanus . . . 378
Pirathon, now Fer'ata . . . . 41
Pisgah, Mount . . . . . 61, 63
Pools, character of . . . . . 277
Solomon's Pools . . . . 281–284
Promontorium Album, near Tyre 18
Pylae, gates or passes of Amanus 336

Q.

Quarantana, Mount, alleged scene of the Temptation . . . 49, 50
Quaresimus, work of on Palestine . . . . . 9

R.

Rabbath, Ammon, now 'Ammân ruins of . . . . . 177
Rahhânîyeh, fountain of . . . 246
Rain, early and latter rain of Palestine . . . . . 291
Ramah, plain of, in Galilee 22, 105, 129
Ramah of Asher, fountain at . 244
Ramathaim Zophim . . . . . 36
Râmîn, village . . . . 108, 275
Ramoth Gilead, probably now es-Salt . . . . . 60
Ramleh . . . . . 33
Raphon, river . . . . . 86
Râs el-'Ain, fountain in Sharon . 111
Great fountains near Tyre . . 365
Râs el-Feshkah, promontory of Dead Sea . . . . . 50
Rasheiya, town of . . . . . 146
Râs esh-Shûka, promontory, anc. Theuprosopon . . . . . 349
Râwy, 'Ain . . . . . 258
Rehoboth, wells of . . . . . 266
Reland, work of on Ancient Palestine . . . . . 11
Remmon, town of . . . . . 106
Rephaim, valley of . 45, 99, 116, 137
Reptiles, of Syria . . . . . 384
Rhinocolura, now 'Arîsh . . . 124
Ribleh, village . . . . . 352
Ritter, Carl, work of on Palestine, etc. 10
Rivers of Syria, sources of . . 154
Rubîn, Wady, course of . . 113, 194
Rûbûdîyeh, Wady, west of Tiberias . . . . . 89
Ruhbeh, plain of . . . . . 322
Ruhaibeh, Wady . . . . . 123
Rukâd, Wady el, in Haurân . . 174
Rumeish, village of . . . . . 104

S.

Sa'adîyeh, fountain of the Kishon 190
Sabbatical River, now Nahr el-'Arûs . . . . . 359
Safa, volcanic tract of . . . . 322
Safed, town of . . . . . 21
Sajûr, river, tributary of Euphrates . . . . . 351
Sakût, ancient Succoth . 78, 81, 165
Salem, same as Jerusalem . . . 102
Sâlim, village and fountains . . 248
Salt, mountain of, at Dead Sea, site of valley of Salt, and city of Salt . . . . . 52, 83
Fountains of . . . . . 262
Lake of, south of Aleppo . . 375
Samaria, mountains of, equivalent to mountains of Ephraim 36
Samaritans, origin of . . . . 39
Sanûr, castle of . . . . . 135
Sârah, fountain near Kerak . . 263
Saris, village . . . . . 33, 115
Sâtâf, village and fountain . 115, 242
Seasons of the year in Palestine . 288
Character of the winter . . . 289
Of summer . . . . . 292
Seijâr, castle and bridge on the Orontes, probable ancient Larissa . . . . . 353
Seir, Mount . . . . . 36
Semak, Wady, east of Lake Tiberias . . . . . 85
Semmam, fountains of . . . . 261
Semâr, village, ancient Simyra . 358
Senir, name for Hermon . . . 347
Sepphoris, town of . . . . . 22
Fountain of . . . . . 244
Sha'ab, Wady, east of 'Akka . 105

Sha'ib, Wady . . . . . 87
Sha'îr, Wady, course of . . . 108
Shalem, now Sâlim . . . . . 137
Shamir . . . . . 35
Sharon, plain of . . . . . 126
Shaveh, valley of . . . . . 101
Shechem. See Nabulus.
Sherî'at el-Mandhûr, the Yarmuk branch of Jordan . . . . . 158
Sherî'ah, Wady, also Wady es-Seba . . . . . 119
Shibboleth . . . . . 167
Shihor Libnath, now Nahr ez-Zerka . . . . . 192
Shittim, or Abel Shittim, valley of . . . . . 83
Shûgr on the Orontes . . . . 353
Shunem, now Sôlâm . . . 27, 245
Shûkîf, castle of . . . . . 357
Siddim, vale of . . . . . 234
Sîdeh, Wady . . . . . 174
Siloam, waters of . . . 98, 100, 284
Simsim, village . . . . . 118
Sinjil . . . . . 111
Sirocco, wind, description of . . 305
In Syria . . . . . 371
Sôba, village . . . . . 46
Socoh, town, now Shuweikeh . 117
Sodom, destruction of . . . 233–235
Apples of Sodom . . . 236, 237
Solomon's Pools, description of . 281
Aqueduct from . . . . . 285
Sorek, valley of . . . . . 116
Snow, at Jerusalem and Palestine 290
Sudeir, Wady and fountain . . 257
Sûf, fountain in Jebel 'Ajlûn . . 261
Sûkhnîn . . . . . 106
Sukkarîyeh, village on road to Gaza . . . . . 269
Sûk Khirbet, ruins near es-Salt . 262
Suleiman, Wady . . . . . 112
Sûlkhad, ancient Sulchah . 174, 321
Summeil, well at . . . . . 269
Sûmt, Wady es . . . . . 116
Sûnamein, village . . . . . 173
Sûr, Wady . . . . . 117
Sûrâr, Wady . . . . . 47, 114
Sûr Bâhil, fountain . . . . . 242
Suweimeh, fountain at Dead Sea 259
Syria, length and breadth of . . 334
Divisions of its extent . . . 335
Waters, climate, and seasons . 366
Diseases . . . . . 371
Geological features . . . . 372
Mineral productions . . . . 376
Soil, trees, fruit, productions, botany . . . . . 376–381
Fauna, birds, fish . . . . 381–383

T.

Tabighah, fountain of . . . 201, 251
Tabor, Mount, description of . . 23
View from . . . . . 24, 25
Not the Mount of Transfiguration . . . . . 26
Cisterns of . . . . . 276
Takeh, lake of, on the Orontes . 353
Tarichoea, region of . . . . . 156
Teffûh, scriptural Teffuah . . . 118
Teim, Wady et, description of . 348
Teis, 'Ain et, . . . . . 262
Tekoa, fountain of . . . . . 242
Tell Abu Nida, hill and crater in Jaulân . . . . . 318
Tell Abu Tumeis, in Haurân . 55
Tell Amâra, in the Lejah . . . 321
Tell Ash'areh in Haurân, and fountain . . . . . 261
Tell el-Bedawîyeh . . . . . 131
Tell Dilly, in Haurân . . . . 173
Tell Dûkweh, east of Haurân . 322
Tell el-Faras, in Jaulân . . 54, 318
Tell el-Haiyeh . . . . 315, 316
Tell Hazûr . . . . . 22
Tell Hûm, on lake of Tiberias, not Capernaum . . . . . 252
Tell el-Kâdy, or Dan, source of the Jordan at . . . 75, 148, 316
Tell Kûrdâny, near 'Akka . 187, 243
Tell es-Sâfieh . . . . . 118
Tell Serrâya . . . . . 173
Tell Shakhal . . . . . 174
Tell Sumeid, in the Lejah . . 321
Tell Zakarîya . . . . . 117
Temperature, of Palestine . . 295
Of Jerusalem . . . . 296, 297

Of the western plain . . . . 298
Of the Jordan valley . . . 298
Of the eastern hill-country . . 300
Terâb, 'Ain et, in Jebel 'Ajlûn . 261
Terkûmieh, village . . . . . 118
Tesîl, village in Haurân . . . 174
Tiberias, lake of, description . . 199
Below the Mediterranean . . 200
Fish . . . . . 205
Scenery . . . . . 201–202
Storms on . . . . . 202
Historical notices of . . . . 203
Crossed four times by Christ . 203
Fisheries of . . . . . 204
Hot springs of . . . . . 205, 206
Tibnîn, castle, fountain near . . 244
Timnath Serah . . . . . 36, 41
Now Tibneh . . . . . 111
Tophet . . . . . 100
Trachonitis, or district of the two Trachones . . . . . 323
Transfiguration, Mount of, in neighborhood of Banias . . 26
Trees of Syria . . . . . 377
Tripoli, situation of . . . . . 349
Tu'rân, plain of . . . . . 130
Turmus Aya, plain of . . . . 111
Tyre, Ladder of, or Scala Tyriorum . . . . . 21
Plain of . . . . . 125
Tyropoeon, valley of . . . . 98

U.

Urtâs, fountain of . . . . . 242
Um el-Fahm . . . . . 33
Um Keis, ancient Gadara . . . 175
Um esh-Shukaf, fountain of . . 243
Usdum, Khasm, Mount of, at Dead Sea . . . . . 51

V.

Valley, term used in English for four different Hebrew words 70–72
Valley of Achor; of Keziz; plain of Moab . . . . . 82
Valley of the Passengers, or Haman Gog . . . . . 86
Of Shaveh, and of Jehoshaphat . . . . . 102
Valley of vision . . . . . 103
Valley of Craftsmen . . . . 113
Of Gibeon . . . . . 115
Of Rephaim . . . . . 116
Of Elah . . . . . 117
The great valley of Syria from Cilicia to the Red Sea . . 333
Volcanic districts of Palestine . 314
Extinct craters . . . . . 317
Districts east of the Jordan 318, 325

W.

Wâleh, river, branch of the Arnon 180
Warm and saline springs . . . 263
Welejeh, village . . . . . 115
Wells, a feature of Palestine 265, 270
Mode of drawing water from . 271
Werd, Wady el, near Jerusalem 115
Winds of the rainy season . . 303
Of summer . . . . . 304
The Sirocco . . . . . 305
Winter, or rainy season of Palestine . . . . . 289

Y.

Yabis, Wady, ancient Jabesh Gilead . . . . . 59, 86
Ya'bûd, village . . . . . 107, 135
Yarmûk, river, branch of the Jordan, now Sheri'at el-Mandhûr 57, 158
Sources of . . . . . 173
Yarûd, fountain of . . . . . 263
Yûhmur, village on the Lîtâny . 356

Z.

Za'âreh, Wady el, stream of . . 146
Zalmon, Mount . . . . . 40
Zebedâny, village . . . . . 363
Zeboim, town of . . . . . 96
Zebulun, plain of, now el-Bûttauf 22
Northern boundary of . . . 106
Zeidy, Wady el . . . . . 174
Zemaraim, Mount . . . . . 41
Zephathah, valley of . . . . 118
Zerka, Crocodile river, near Caesarea . . . . . 191

Ziklag, town of . . . . . 122
Zin, desert of . . . . . 16
Ziph, now Tell Zîf, cisterns at . 274
Zoar, site of . . . . . 233
Zorah, village . . . . . 23, 114
Fountain of . . . . . 244
Zurka, ancient Jabbok . . . . 57
Zurka Ma'în, stream of, east of Dead Sea . . . . . 61, 88, 178
Zuwinah, Wady . . . . . 314

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